A Lecture
ON
THE DIFFERENTIAL DIAGNOSIS OF CARDIAC MURMURS.

Delivered in the Extra-Academical School of Medicine, Edinburgh,

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GIVEN the presence of a murmur in the præcordial region, we have to determine:—

A. Whether it is *exo*cardial or *endo*cardial.

B. If exocardial, whether it is a pleural, pericardial, or pericardial-pleural murmur.

C. If endocardial:

1. The valve at which it is produced, and whether it is direct or regurgitant.

2. Whether it is organic or functional.

3. If organic, the extent and gravity of the lesion.

The differential diagnosis of exocardial and endocardial murmurs is, as a rule, easily made by attention to the following points:

1. *The rhythm of the murmur.*—Pleural friction sounds are, of course, at once distinguished from cardiac murmurs by the fact that they correspond in frequency to inspiration and expiration, and that they do not correspond with the pulsations of the heart.

Exocardial murmurs (pericardial friction and pericardial-pleural friction murmurs) do correspond in frequency with the pulsations of the heart, but their synchronism is, as a rule, much less perfect (they do not correspond so exactly

FIG. 1.

Outline figure showing the point of differential maximum intensity (°) of the presystolic mitral murmur (mitral stenosis), and the direction in which it is propagated.

with the heart sounds) than the synchronism of endocardial murmurs.

Pericardial murmurs, when typical, are double (the to-and-fro friction murmur of pericarditis), but the murmur of combined aortic stenosis and incompetence is also double; hence in the majority of cases the problem resolves itself into the differential diagnosis of these two conditions (pericarditis and double aortic disease).

The *rhythm* of exocardiac murmurs is often *variable*, is apt to change from day to day, from hour to hour, or even during the actual examination of the patient. Alterations in the relative position of the two opposed surfaces of the pericardium, such as may be produced by alterations in the position of the patient, by the application of pressure to the

FIG. 2.

Outline figure showing the point of differential maximum intensity (°) of the systolic mitral murmur (mitral regurgitant), and the direction in which it is propagated. + indicating the normal position of the nipple, is perhaps a shade too high.

præcordia through the stethoscope, frequently modify the character (rhythm and position) of pericardial murmurs.

Endocardial murmurs are not variable, but fixed.[1]

Endocardial murmurs, with the exception of the pre-

FIG. 3.

Outline figure showing the point of differential maximum intensity (°) of the systolic aortic murmur (aortic stenosis), and the direction in which it is propagated.

systolic murmurs, replace more or less completely the cardiac sounds. (See below, Rhythm of Endocardial Murmurs.) Pericardial murmurs accompany and may obscure the cardiac sounds, but do not replace them.

It is sometimes difficult to say whether a cardiac sound is replaced or only obscured by the murmur. In such cases the sound may sometimes be distinguished by removing the

[1] In some cases of mitral stenosis the murmur disappears when the position of the patient is altered, when he gets up, but the rhythm of the murmur does not change: it always remains presystolic.

ear a short distance from the end of the stethoscope, or by so placing the stethoscope that the ear-piece only partly covers the external auditory meatus.

2. *The sound characters of the murmur.* — Exocardial murmurs are friction murmurs, and, as a rule, have a harsh,

FIG. 4.

Outline figure showing the point of differential maximum intensity (*) of the diastolic aortic murmur (aortic regurgitation), and the direction in which it is propagated.

grating character. In some cases where the heart is acting feebly, and the lymph between the two opposed surfaces of pericardium is yielding—i.e., recent—the pericardial murmur is soft, closely resembling the sound characters of many double aortic murmurs. An exocardial murmur appears to

FIG. 5.

Outline figure showing the point of differential maximum intensity (*) of the systolic pulmonary murmur, and the direction in which it is propagated.

be superficial. This is not a point of much importance, for many endocardial murmurs have the same character.

3. *The point of maximum intensity of the murmur, and the direction in which it is propagated.*—Exocardial murmurs are, as a rule, best heard over the borders of the heart, but have no special point of maximum intensity. Endocardial murmurs are, on the contrary, generally heard loudest at certain definite points. Mitral murmurs, for example, have their point of maximum intensity over the apex. (See Figs. 1 and 2.) Exocardial murmurs are usually heard over

FIG. 6.

Outline figure showing the point of differential maximum intensity (*) of the systolic tricuspid murmur (tricuspid regurgitation).

a limited, sometimes a remarkably limited, area, and are not propagated in the course of any particular blood-current, as endocardial murmurs are. (See Figs. 1, 2, 3, and 4.) The regurgitant aortic murmur, for example, is propagated downwards, the direct aortic murmur upwards over the

GRAPHIC REPRESENTATION OF CARDIAC MURMURS.

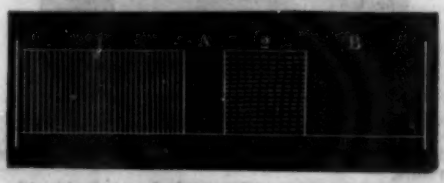
FIG. 7.

Graphic representation of one complete (normal) cardiac revolution. The sounds are represented by shaded (horizontally dotted) spaces, the pauses by blank spaces. 1 = the first sound, 4-10ths; 2 = the second sound, 1-10th. A = the short pause, 2-10ths; B = the long pause, 3-10ths.

course of the aorta, and into the vessels of the neck. (See below, Propagation of Endocardial Murmurs.)

4. Exocardial murmurs (pericardial and pericardial-pleural) appear abruptly (acutely, so to speak), and, as a rule, occur

FIG. 8.



Systolic murmur replacing the whole of the first sound. The murmur in this and the succeeding figures is represented by continuous vertical lines, the normal sound by dotted horizontal lines.

in the course of some general affection, rheumatic fever for example. Endocardial murmurs may appear abruptly, and in the course of rheumatic fever, &c., but in many cases it is impossible to fix the date of their occurrences (see foot-

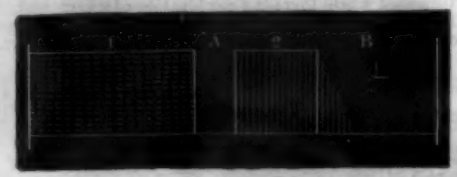
note). The absence of constitutional disturbance, and the fact that the murmur is an old one, point strongly, therefore, to its being endocardial.[2]

5. In the case of the double aortic murmur, which is the endocardial murmur, which is most liable to be mistaken for a pericardial friction murmur, the jerking, collapsing character of the pulse is a valuable diagnostic guide. The pulse in aortic cases is, as a rule, normal, or only slightly increased in frequency. In pericarditis it is usually accelerated. The symptoms may afford some corroborative evidence. In pericarditis there is, as a rule, some pain and tenderness on pressure. In cases of valvular disease there is seldom pain and tenderness, unless in aortic cases, in which the pain is usually angina-like in character.

FIG. 9.

Diastolic murmur replacing the second sound.

FIG. 10.



Diastolic murmur replacing the second sound, and extending into the long pause.

The murmur is exocardial. We have now to determine whether it is a pleural, pericardial, or pericardial-pleural murmur.

Ordinary pleural friction is at once distinguished by its rhythm corresponding to the respiratory movements.

It is sometimes extremely difficult to distinguish pericardial friction and pericardial-pleural friction.

Pericardial-pleural friction is rare. It occurs when that portion of the pleura which is reflected over the pericardium is inflamed, and is produced by the movements of the heart rubbing this rough and inflamed portion of pleura against the chest-wall, or against the visceral pleura which is in contact with it. (The visceral pleura is usually inflamed, too.)

FIG. 11.

Presystolic murmur occurring during the long pause, and ending abruptly with the commencement of the first sound. In this case the first and second sounds are represented as normal.

FIG. 12.

Systolic murmur replacing and limited to the period of the first sound; diastolic murmur replacing the second sound, and extending into the long pause.

1. Pericardial-pleural friction is generally best heard over the borders of the heart—i.e., where the visceral and parietal portions of the pleura are in contact.

2. Pericardial-pleural friction is, as a rule, more affected by the respiratory movements than ordinary pericardial friction. I have twice observed it decidedly increased during inspiration—i.e., when a larger surface of the two opposed and inflamed portions of pleura came in contact.

Walshe states that it is usually increased during expiration. Where this is the case, the murmur is probably produced by friction between the outside of the pericardium and the chest-wall, but not between the outside of the pericardium and the visceral pleura.

3. The pericardial pleural friction murmur is even more variable than pericardial friction, and may cease with certain pulsations of the heart.

4. On full and rapid inspiration it may disappear and be merged into ordinary pleural friction. This is not, however, pathognomonic, for ordinary pericarditis is frequently accompanied by pleurisy, and in such cases the pericardial friction may be *masked* (it does not disappear) by the pleural friction sound.

FIG. 13.

Presystolic and systolic murmurs.

The murmur is endocardial. At which valve is it produced, and is it direct or regurgitant?

We determine these points by regarding:

(a) *The point of maximum intensity of the murmur*—or rather the point of *differential* maximum intensity for all valvular murmurs—may sometimes be heard with great intensity immediately over the valves. According to Walshe, "a superficial area of half an inch square will include a portion of all four sets of valves *in situ*: an area of about one-quarter of an inch, a portion of all except the tricuspid."[3] The points of differential maximum intensity for the different valves are as follows:

Mitral=the apex (see Figs. 1 and 2), *wherever it may be*; not necessarily in the fifth left interspace, an inch and a half below and slightly internal to the left nipple.

Aortic=second right costal cartilage (aortic cartilage)—i.e., that point where the aorta is most superficial. (See Figs. 3 and 4.) The aortic diastolic murmur is often heard loudest at the lower end of the sternum. (See below, Direction of Propagation of Murmurs.)

Pulmonary=third left costal cartilage (pulmonary cartilage), at its junction with the sternum. (See Fig. 5.)

Tricuspid=lower end of the sternum, or rather the junction of the lower left cartilages with the sternum.

A systolic murmur is sometimes heard equally loud both at the base and the apex, and it comes to be a question whether there are two or whether there is only one murmur.

In such cases (1) the murmur must be carefully traced

[2] If the murmur is present at the first examination, and if the patient has not been previously under observation, it may be impossible to say whether it is *recent* or not.

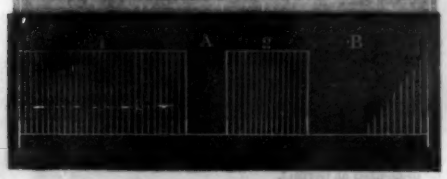
[3] Walshe, Diseases of the Heart p. 6.

from one point to the other (from the apex to the aortic cartilage, for example). If the intensity of the murmur be diminished at a point between the two positions there are probably two murmurs.

(2) The tone of the murmur at the two points must be carefully noted. If the tone differs there are two murmurs.

(3) The direction of propagation must be observed. If the murmur is propagated both upwards towards the axilla and upwards over the aorta and into the vessels of the neck there are two murmurs.

FIG. 14.



Presystolic, systolic, and diastolic murmurs.

(b) *The rhythm of the murmur.*—Endocardial murmurs are either systolic, diastolic, or presystolic.

Systolic and diastolic murmurs replace more or less completely the first and second sounds respectively, and may are combined, as in Fig. 13. The difficulty is less in the combined aortic murmurs. In the latter case there is nearly always an appreciable interval between the systolic and diastolic portions of the murmurs, as seen in Fig. 12.

Figs. 8 to 14 are intended to be graphic representations of the various cardiac murmurs. Fig. 7 represents the normal cardiac cycle, showing the relation of the sounds and silences. In the succeeding figures the interrupted horizontal lines represent the normal cardiac sounds; the continuous vertical lines the new sounds or murmurs. These diagrams are, I think, superior to the usual graphic representations of cardiac murmurs, inasmuch as the time relations of the cardiac sounds and silences are accurately preserved.

SYSTOLIC MURMURS.

A systolic mitral murmur = mitral regurgitation.

A systolic aortic murmur = aortic stenosis, roughening, or (?) anæmia.

A systolic pulmonary murmur = pulmonary stenosis, roughening or (?) anæmia.

A systolic tricuspid murmur = tricuspid regurgitation.

DIASTOLIC MURMURS.

An aortic diastolic murmur = aortic regurgitation. *A pulmonary diastolic murmur* = pulmonary regurgitation (infinitely rare).

PRESYSTOLIC MURMURS.

A mitral presystolic murmur = stenosis or roughness of the mitral orifice.[4] *A tricuspid presystolic murmur* = stenosis or roughness of the tricuspid orifice (infinitely rare).

(c) *The direction in which the murmur is propagated.*—Murmurs are propagated either by (1) *diffusion*—i. e., in all directions through the structures within the thorax, a method which is of little value or importance, or—

(2) *Conduction* through solid structures.

(3) *Convection* carried by fluid *in the direction in which it is flowing.* A most important mode of propagation for our present purpose.

The following are the directions in which the chief endocardial murmurs are propagated by convection:—

Mitral regurgitant murmurs, upwards and towards the left axilla (see Fig. 2); often well heard at the inferior angle of the left scapula. According to George Balfour and others, the chlorotic murmur heard in the pulmonary area is a mitral regurgitant murmur (see below), and propagated to this situation through a dilated auricle.

Mitral direct murmurs, forwards and downwards, usually only to a very limited extent. (See Fig. 1.)

Aortic regurgitant murmurs, downwards in the direction of the cavity of the ventricle; but since the sternum is such a good sound conductor of sound the murmur of aortic regurgitation is well propagated along and often best heard at the lower end of that bone. (See Fig. 4.)

Aortic direct murmurs, upwards along the course of the aorta and into the great arteries of the neck. (See Fig. 3.)

Pulmonary regurgitant murmurs (infinitely rare), downwards towards the lower end of the sternum.

Pulmonary direct (very rare), deeply into the chest; and hence their direction cannot, as a rule, be traced for any distance on the surface of the chest. (See Fig. 5.)

Tricuspid regurgitant, backwards and upwards towards the right axilla, but not over the course of the aorta, nor into the vessels of the neck.

Tricuspid direct (infinitely rare?), forwards and downwards and to the left, but only to a very limited extent.

(d) *The sound characters of the murmur* are of comparatively little importance, except in the case of the presystolic murmur, which presents peculiar and characteristic features.

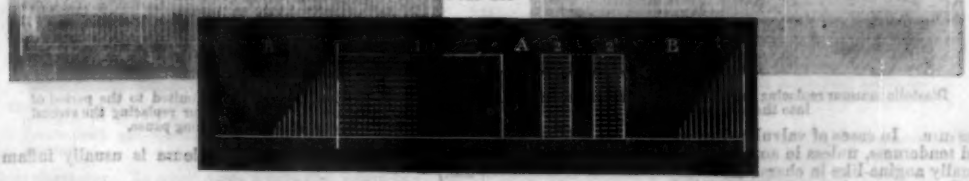
Direct murmurs are usually louder and harsher than indirect murmurs. Much, however, depends upon the force of the blood-current (i.e., the force of the heart) which produces the murmur.

FIG. 15.

Post-diastolic murmur, which occurs in some rare cases of mitral stenosis. It is separated from the commencement of the first sound by an appreciable interval. Compare with Fig. 11, which represents the usual typical presystolic murmur of mitral stenosis.

also increased where there is a combination of murmurs such as I have represented in Figs. 12, 13, and 14. This is more especially the case where a presystolic and systolic mitral

FIG. 16.



Graphic representation of the cardiac cycle in a typical case of mitral stenosis—viz., presystolic murmur, short valvular first sound, reduplicated second sound.

[4] The murmur of mitral stenosis is sometimes rather post-diastolic than presystolic—i. e., it occurs during the first period of the long pause, and is separated from the first sound by an appreciable interval. (See Fig. 15.) In such cases there is probably something which prevents the final forcible and complete contraction of the auricle, which is the active agent in the production of the ordinary typical presystolic murmur.

The mitral presystolic murmur commences gradually, increases in intensity, and ends abruptly with the occurrence of the first sound. It is rough. The first sound which follows it is altered in character, has lost its normal dull tone and has become shorter and sharper, more like a second sound, for which it is often mistaken. The second pulmonary sound is accentuated and often reduplicated. (See Fig. 16.)

The alteration in the character of the first sound, which is observed in cases of mitral stenosis, is due to the small amount of blood which gets into the left ventricle. The first sound as heard over the right ventricle is of normal tone.

The chief characters of the murmurs which are observed in connexion with the different valvular lesions are shown in the table to be given in the concluding part of the lecture.

(*e*) *The effect of the lesion on the heart and circulation.*—In the case of organic murmurs this is of great importance, and in doubtful cases affords most valuable evidence as to the nature of the lesion. It will, however, be more convenient to consider this point when speaking of the character of the lesion. (See below.)

(*f*) The relative frequency of the different valvular lesions may be of value in some cases—as, for example, in deciding whether a murmur is aortic or pulmonary. It must always be remembered that organic lesions in the adult (i.e., primary organic lesions) are in the vast majority of cases left-sided.

(To be concluded.)

IVORY EXOSTOSIS IN BOTH EARS SUCCESSFULLY REMOVED BY OPERATION.

By GEORGE P. FIELD, M.R.C.S.,
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TWO years ago I published in THE LANCET a case of ivory exostosis in both ears, in which I had successfully operated with the American dental engine. This instrument is, I believe, the only one which will penetrate with any certainty such pre-eminently hard and unyielding growths of the petrous bone. For this mode of treatment we are indebted to Dr. Arthur Mathewson of Brooklyn, New York, who kindly sent me his paper on the subject.[1] I operated in my former case seven times on large ivory growths, completely filling up both ears. The patient was seven hours in all under chloroform and ether. No one can imagine, unless he has actually drilled into these dense tumours, their adamant-like consistency, and the great difficulty there is in making any impression on them.

Toynbee and others consider that these growths are invariably found in gouty and rheumatic subjects; whilst other authors, such as Triquet, think they are only seen in syphilitic patients; and Gruber believes such diseases may influence their production. In the cases I have seen there has, in no single instance, been discovered any trace of gout or syphilis. I rather believe they are more often due to a chronic inflammation of the walls of the external meatus, such as I think might be produced from sea-bathing. It is a remarkable fact that in both my cases of double ivory exostosis the patients were in the habit of bathing constantly day after day in the sea, and they both attributed their ear mischief to this cause alone. The aquatic habits of the Hawaiian islanders are well known;[2] and Dr. C. T. Blake (quoting Professor Wyman) has pointed out the frequent presence of exostoses in the external auditory meatus observed in the crania of these people. As it has been well put, "A mechanical irritation continued for a long time, on any part whatever of the osseous auditory meatus, can give rise at that place to an osseous tumour."[3]

Von Tröltsch is of opinion that considerable pain is always felt in bony tumours of the meatus when touched; in the case (Miss H——), which I shall relate further on, there was certainly great pain produced from the slightest touch by a probe. On the other hand, I have remarked that the true ivory exostosis may be examined with instruments without causing the slightest pain. The true ivory exostosis is usually bilateral, covered with white, smooth skin and hairless; it is of ivory consistency, and arises near the orifice of the meatus. Such growths, as I have before pointed out, in other parts of the body would be called hyperostoses. Their development is insidious, and they occur in apparently healthy organs. Their very existence is not suspected until the patient discovers that his hearing is rapidly failing him, while the absence of pain might lead him to regard it at first as a trivial matter. "The ivory exostosis has been observed to be much more common in men than in women. It arises from a broad base in the posterior wall of the external meatus, either as a long bony ridge or as a normal tumour or tumours. This form is acquired, and not congenital. Its growth is not rapid, nor have we often any signs of inflammation, until the patient becomes suddenly deaf from the complete occlusion of the meatus and consequent irritation set up thereby." The pedunculated form of exostosis, on the other hand, is rapid in growth and the suppuration is plentiful and very offensive.

When ivory exostoses are multiple they do not, as a rule, cause a great amount of deafness. They are smaller in size, and are not confined to the posterior wall. Three of them are often found growing from opposite sides; they become so wedged into one another that they cannot close up altogether, and a triangular space is therefore left between their apices.

These smaller multiple exostoses are usually found nearer to the membrana tympani. A gentleman, Mr. R—— of Cambridge, lately consulted me for slight deafness, who had three exostoses in the right ear, and two in the left. In the right ear there was a triangular aperture left, and it is a remarkable fact that these multiple excrescences do not entirely fill up the canal, for there is always sufficient space left between them for the passage of sound. But the opening left is necessarily small, and the patients are often very deaf, for any slight obstruction caused by cerumen, or even water, will effectually shut out sound. To remove the obstruction in such a narrow passage is not an easy matter. Some time ago a clergyman, the Rev. Dr. M——, consulted me for extreme deafness in both ears, of long standing, caused by a filling up by cerumen of the spaces left between multiple exostoses, three in each ear, and who afterwards heard very fairly when I had cleared the stricture. In September, 1880, I saw Dr. G—— of Limerick, who came to show me his multiple exostoses, and who had entirely regained his hearing after a long period of deafness, under the skilful hands of Dr. Macnaughton Jones of Cork.

Professor Gruber has found obliteration of the Eustachian tube from osseous tissue developed in its walls. In most cases of aural exostoses this is not my experience, as I have never seen an example of the kind. Cases have been recorded, called ivory exostoses, in which, by drilling here and drilling there and then using the bone forceps, the tumour has been removed, the whole operation lasting no longer than twenty minutes. The following is, I believe, a case in point, and a good illustration of the same operation. Miss H——, aged twenty-four, in good health, with no history of any kind of deafness in her family, was sent to consult me on June 1st, 1880, by Dr. Gibson of Hull. She had a hard bony growth, which looked something like a small snail-shell, and almost filled up the orifice of the right external auditory meatus. She could hear the watch one inch, and the tuning-fork much better, in the deaf ear. She would not allow a thorough examination to be made, as she complained of great pain when the bone was touched. The growth had been gradually increasing in size, and she had been slowly getting very deaf. On June 2nd, having placed the patient under chloroform, I proceeded to make a thorough examination. With the aid of a probe I found that the tumour arose from the anterior wall (said to be very rare), and near the orifice of the meatus, which it all but filled up. I then proceeded to use the dental engine, making a small hole in the base of the tumour, close up to the anterior wall. I then seized it with a strong pair of dressing forceps, and with little difficulty took it completely away. The whole operation lasted about fifteen minutes. In ten days' time the patient returned home, hearing perfectly well. This was soft bone, and very easily treated. Let anyone try to saw through the hardest part of the temporal bone, and the resistance offered in that case would give some idea of the difficulty of an operation on an ivory exostosis. The ivory exostosis is less vascular, and therefore harder even than other portions of the bone. Under the microscope the

[1] Transactions of the International Otological Congress, 1876.
[2] "The natives here are almost amphibious."—"A Voyage in the *Sunbeam*," by Mr. Brassey.
[3] See Medical Press and Circular, July 9th, 79, paper by Dr. Delstanche, translated by Dr. Cassels.

softer bone tumour from Miss H——'s ear, with a thin section under a low power, 75 diameters, shows that the growth is made up of material similar in structure to newly-formed bone. The free surface is bounded by fibrous membrane raised into small papillæ, and covered by squamous epithelium. In the substance of the tumour trabeculæ of bone form a sort of spongy tissue, in the meshes of which a vascular medullary tissue is contained. Magnified 350 diameters, the fibrous membrane shows no nerves or glands, and only a few small vessels. The layer of bone immediately beneath it is more condensed and thicker than the central portions. Its lamellæ are parallel to the surface, and contain but few bone corpuscles. In the central portion of the growth the trabeculæ are thinner and limit irregular oval spaces. These are filled in some parts with a richly nucleated fibrous tissue containing numerous spindle and round cells. In other parts there is but little fibrous tissue scattered in the midst of round cells. No giant-cells are seen anywhere. The vessels consist chiefly of very large thin-walled tubes, resembling dilated capillaries. They are well filled with blood. Here and there a few arterioles are visible.

The tumour differs from a true ivory exostosis in containing cavities filled with medullary tissue, and hence it may be termed "a spongy osteoma," as defined by Cornil and Ranvier. Some exostoses of pedunculated form may be removed by wire; in these suppuration is generally plentiful, and occasionally a polypus arising from the exostosis precedes its appearance, as in a case I published.[4] Kramer has described an interesting instance of a polypus in the form of a stalactite, so hard that a knife could not cut it. Clark of Bristol has removed by electricity an exostosis, which followed the growth of a mucous polypus, from the right ear of a girl nineteen years of age. But Bonnafont, I believe, was the first surgeon who dealt successfully with an ivory exostosis causing complete closure of the meatus. This was accomplished by means of graduated styles, and by the use subsequently of nitrate of silver. I have found this method of treatment almost unbearable, from the intense pain to which it gives rise. Tröltsch has successfully used laminaria to enlarge the opening between the growth and the wall of the auditory canal. Miot adopted another plan; he trephined the tumour with a very fine instrument in two or three places, set up suppuration, and dead bone afterwards came away in sufficient quantity to allow the membrana tympani to be seen. *(To be concluded.)*

ON SOME POINTS IN THE

PATHOLOGY AND TREATMENT OF ACUTE RHEUMATISM AND DIABETES.[1]

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I PROPOSE to consider four questions:—

1. What is the starting-point of the morbid process in acute rheumatism?
2. Is there any pathological relationship between it and diabetes mellitus?
3. Will any remedy cure acute rheumatism; and
4. If so, how does the remedy act?

I think it will be conceded that these are questions of considerable interest, and well worth attention. The solution I am about to offer of the problems may not be altogether complete; but if there is no unreasonable improbability about the theory, it may at least be suggestive, and perhaps lead to further investigation.

1. What is the starting-point then of the morbid process? Let us turn our attention to the muscular tissue and consider for a moment the physiological changes which take place in that tissue in a state of health. The hæmoglobin of the venous blood as it passes through the lungs becomes wholly, or almost wholly, oxyhæmoglobin. Hurried to the tissues, the oxygen of the arterial blood passes from the blood into the muscular tissue; immediately it has passed it is then fixed in some way at present unknown to us; the tissue packs away at every moment each molecule of oxygen which it receives from the blood so as no longer to be removable by diminished tension. Out of the body the tension of oxygen in the muscle is *nil*, none can be obtained from it from the air-pump. The oxidation takes place in the muscle itself, oxygen passes into the tissue, but we cannot trace its sojourn there. On the other hand, the muscle is always producing and discharging carbonic acid, and when it contracts there is a sudden and extensive increase of the normal production of that gas. With much but not all of its oxyhæmoglobin reduced, the blood passes on as venous blood, and with its carbonic acid tension increased it arrives in the lungs, where the gas is discharged.[2]

This change now in the muscular tissue, the fixing of oxygen and exhalation of carbonic acid, must be regulated by some nervous mechanism, in the same way, for instance, as the blood is prevented from coagulating in its vessels or the stomach from digesting itself; and this power must originate in some nervous centre, which we may call the "inhibitory chemical centre," or, using a more applicable term, the "coördinating chemical centre"—the centre which restrains chemical action and regulates the production of heat. "And, indeed, we have some positive evidence of the existence of such a mechanism."[3]

Suppose this "coördinating chemical centre" has undergone functional or organic change, and that this regulating action is consequently weakened or removed, what would be the result? Instead of the muscle absorbing and fixing oxygen and giving out carbonic acid, some intermediate changes in the tissue would show themselves; the tissue would be disintegrated and oxidised more vigorously, and those changes would take place, in some degree at least, which in the laboratory are seen to result from decomposition or the action of oxygen or ozone. And what are those changes? One of the first is that the reaction of the tissue becomes acid. "Whilst muscle is alive and in a physiological condition it possesses a neutral reaction to test-paper; so soon as it dies this reaction becomes acid, and this takes place so rapidly in warm-blooded animals, as to render it almost impossible to ascertain the normal reaction."[4] The acid produced is lactic acid. Whence is it derived? Muscle we know contains a small amount of glycogen, which by hydration may be converted first into glucose and then into lactic acid.

$$\underset{\text{Glycogen.}}{C_6H_{10}O_5} + \underset{\text{Water.}}{H_2O} = \underset{\text{Glucose.}}{C_6H_{12}O_6} = \underset{\text{Lactic acid.}}{2C_3H_6O_3} \text{ or } \underset{\text{Acetic acid.}}{3C_2H_4O_2}$$

$$\underset{\text{Lactic acid.}}{2C_3H_6O_3} + \underset{\text{Oxygen.}}{6O_2} = \underset{\text{Carbonic anhydride.}}{6CO_2} + \underset{\text{Water.}}{6H_2O}$$

Again, lactic acid may be derived from alanine, a substance metameric with urethane and sarcosine, $C_3H_7NO_2$.

$$\left\{\underset{\text{Urethane.}}{CO(NH_2)OC_2H_5} \text{ or } \underset{\text{Alanine.}}{C_2H_4(NH_2)CHO_2}\right\} + \underset{\text{Water.}}{H_2O} = \underset{\text{Lactic acid.}}{C_3H_6O_3} + \underset{\text{Ammonia.}}{NH_3}$$

Sarcosine, though not found in a free state in the body, is obtained in the laboratory from dead muscle. Nor is it inconceivable that under the action of chemical and *vital* forces acting upon the muscle, urethane or alanine, or it may be some other compound metameric with sarcosine, may be formed in the muscle as it passes from a state of health and activity to one of disintegration and death. At any rate, whatever be the source of lactic acid, whether from glycogen or other compounds in the muscle, we know that it appears in the muscle as the result of disconnexion with the nervous centre, and I therefore suggest that if the "inhibitory" or "coördinating chemical centre" be weakened, as in acute rheumatism, by the effect of cold or other cause, lactic acid instead of being oxidised in the muscle will pass from the tissue into the blood; and independently of its own conversion into carbonic acid and water in the blood, there produce its effect on the smaller arteries, and, by determining a larger amount of blood and oxygen to the part, cause more rapid oxidation of tissue, and develop considerable heat or pyrexia.

That the presence of lactic acid in the blood will determine a larger amount of oxyhæmoglobin to the tissue and cause more rapid transformation of tissue than normal, is a natural inference from the researches of Dr. W. H. Gaskell, who

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[4] Brit. Med. Jour., Feb. 2nd, 1878.

[1] The substance of two papers read before the Cambridge Medical Society, Nov. 5th, and the Cambridge Philosophical Society, Nov. 22nd, 1880.

[2] Text-book of Physiology by Dr. Michael Foster. 2nd edit., pp. 386-7.

[3] Foster, loc. cit., p. 376.

[4] Gamgee: Physiological Chemistry, vol. i., p. 358.

found that the injection of a solution of lactic acid (1 to 1000) into the circulation caused dilatation of the smaller arteries.[5]

But if lactic acid is derived from some variety of $C_3H_7NO_2$, or from glycogen, whence comes the glycogen, or that other substance? Again, in acute rheumatism there is a large elimination of lithates—whence are they?

Let us turn our attention to the constituents of dead muscle. Creatine in dead muscle by hydration may be resolved into sarcosine and urea; and four molecules of sarcosine, together with nine atoms of oxygen, contain the elements of uric acid, glycogen, carbonic anhydride, and water.

$$\underset{\text{Creatine.}}{C_4H_9N_3O_2} + \underset{\text{Water.}}{H_2O} = \underset{\text{Sarcosine.}}{C_3H_7NO_2} + \underset{\text{Urea.}}{CH_4N_2O}$$

$$\underset{\text{Uric acid.}}{4C_3H_7NO_2} + O_9 = \underset{\text{Uric acid.}}{C_5H_4N_4O_3} + \underset{\text{Glycogen.}}{C_6H_{10}O_5} + \underset{\text{Carbonic anhydride.}}{CO_2} + \underset{\text{Water.}}{7H_2O}$$

But as sarcosine is not found in living tissue, if urea, uric acid, &c., are products of living tissue, then there must be some undetermined compound of $4C_4H_9N_3O_2$ from which in living muscle these substances are produced, and from which in the process of dying sarcosine results.

Now, $C_3H_7NO_2$ represents sarcosine, urethane, and alanine, to which I will add a fourth, an entirely hypothetical compound—cyanic ether $+ H_2O$.

$$C_3H_7NO_2 = \underset{\text{Urethane.}}{CO,(NH_2),OC_2H_5}$$
$$= \underset{\text{Alanine.}}{C_2H_4(NH_2)CHO_2}$$
$$= \underset{\text{Sarcosine.}}{C_2H_4(CH_3)NO_2}$$
$$= \underset{\text{Hypothetical compound.}}{CN,C_2H_5O,H_2O}$$

To form the representative of sarcosine in the living tissue I want a very unstable compound, and one that is clear and fluid. Cyanic ether is a transparent, colourless, very mobile liquid, and is decomposed by water.

$$2\{\underset{\text{Cyanic ether.}}{CN,C_2H_5O}\} + H_2O = \underset{\text{Carbonic anhydride.}}{CO_2} + \underset{\text{Diethyl carbamide.}}{N_2CO(C_2H_5)_2H_2}$$

And taking the other ether which the formula represents—viz., urethane—I have

$$4C_3H_7NO_2 = 2\left[\{\underset{\text{Urethane.}}{CO(NH_2)C_2H_5O}\}\{\underset{\text{Hypothet. compd.}}{CN,C_2H_5O,H_2O}\}\right]$$

$$4C_3H_7NO_2 + O_9 = \qquad\qquad + O_9$$

$$= (NH_2)_2(CN)_2(CO)_2 + (C_2H_5O)_2C_2O_2 + CO_2 + 7H_2O$$

$$= \underset{\text{Uric acid.}}{C_5H_4N_4O_3} + \underset{\text{Glycogen.}}{C_6H_{10}O_5} + \underset{\text{Carbonic anhydride.}}{CO_2} + \underset{\text{Water.}}{7H_2O}$$

By taking this as the living representative of $4C_3H_7NO_2$ we have a formula which, when oxidised, can theoretically be split up into uric acid, glycogen, &c., and gives a molecular formula for them, and which, if there was a change in the constitution of the molecules, could produce sarcosine. The chief difficulty in accepting such an antecedent for sarcosine is that it involves the conversion of (NH_2) compounds into those of NO; and yet, from the researches of Dr. Bence Jones,[6] such a change does take place in the system, acetate of ammonia, when given internally, being eliminated as nitrates.

By combining cyanic ether with urethane we should probably have a compound somewhat like living muscle, which, as was shown by the observations of Kühne and Eberth,[7] who had the good fortune to see a living nematode freely moving about in it, is semifluid. Cyanic ether also combines with urea, forming a crystalline substance, which does not possess the characters of an ordinary ammonium compound.

It is not improbable that $4C_3H_7NO_2$ may exist in the tissue before hydration, as,

$$2\left[\{\underset{\text{Urethane.}}{CO(NH_2)C_2H_5O}\}\{\underset{\text{Cyanic ether.}}{CN,C_2H_5O}\}\right]$$

and so resembles uric acid in requiring hydration and oxidation to convert it into recognised substances. In order to convert uric acid into urea it must be combined with water and oxygen, the results differing according as an alkali or an acid is employed for the conversion. If hydration in the living body is performed in the liver, and oxidation in the muscular tissue, the following intermediate compounds between uric acid and urea would be developed. If hydrated in the liver—

$$\underset{\text{Uric acid.}}{(NH_2)_2(CN)_2(CO)_2} + \underset{\text{Water.}}{H_2O} = \underset{\text{Pseudo-uric acid.}}{(NH_4)(CNO)(NH_2)(CN)(CO)_2}$$

In alkaline fluid this substance would be oxidised in the tissue into allantoin $(NH_4)(CNO)(NH_2)(CN)(CO)_2 + CO_2$, and the allantoin would then be hydrated in the liver into urea $(NH_4)(CNO)$, and allanturic acid $(NH_4)(CNO)(CO)_2$ to be again oxidised in the tissue into urea and $2CO_2$.

If the blood had a different reaction uric acid after hydration in the liver would be split up into urea $(NH_4)(CNO)$ and $(NH_2)(CN)(CO)_2$, the urea passing off to the kidney, the other substance being oxidised in the tissue into alloxan $(NH_2)(CN)(C_2O_4)$, to be further hydrated in the liver, and split up into urea and mesoxalic acid $(H_2O)(C_3O_4)$.

It these substances, however, are formed by oxidation in the tissue, and by hydration in the liver, how is it that in health they appear only to a comparatively small extent in the blood? I will illustrate this by reference to electrolysis. In the decomposition of water by electrolysis oxygen appears at one pole, hydrogen at the other, and though the fluid between them appears to be at rest, we know there is a molecular change all along the line. In the transmission, likewise, of the current along the telegraph or telephone wire, there is a molecular change through the whole length of the wire, but the result is seen or heard only at the end. So it probably is in these transformations of the tissues. The blood acts as the conducting medium. It contains substances differing in their properties, but closely allied in chemical composition to those contained in muscle. Creatine, then, we may assume, is hydrated in the liver into urea and the representative of living sarcosine; these products are not set free, or only to a very small extent, in the blood, but there is an interchange of molecules in the blood between the liver and kidney on the one hand, and the liver and the tissue on the other. The change effected in the liver in this way shows itself only in the kidney and the tissue; the urea is eliminated, the living sarcosine appears in the tissue to be immediately oxidised, and to shew itself in the liver as uric acid, glycogen, and carbonic acid gas, the last being liberated in the blood, and passing in the stream to be exhaled by the lungs. The uric acid and glycogen are now hydrated in the liver, the results showing themselves in the tissue and in the kidneys.[8] According as the blood is alkaline or otherwise will uric acid pass through the changes I have above referred to.

Now, a very interesting point arises. In considering the changes of uric acid above described we see that urea is formed both in the muscle and in the liver, and we may assume that when it is formed it passes at once by intermolecular change direct to the kidneys. So also we may assume that carbonic acid, whether formed in the muscle or in the liver, directly it is formed passes at once into the blood, to be eliminated by the lungs. Glycogen $(C_6H_{10}O_5)_2C_2O_2$ by hydration is transformed into glucose $(C_6H_{12}O_6)_2(CO_2)_2$, and, like uric acid, may, under different circumstances, undergo different transformations. If the blood is normal and alkaline by hydration in the liver it may become $(C_6H_{12}O_6)_2 + 2CO_2$, the carbonic acid at once entering the blood, the alcohol $(C_2H_6O)_2$ appearing in the tissue, to be oxidised into $4CO_2 + 6H_2O$; passing, perhaps, through the stage of $(C_2H_4O_2)_2$ acetic acid, and $2H_2O$.

But if the blood is in an abnormal condition the interchange of the molecular elements may be modified (and the alkaline reaction of blood becomes, like muscle, changed when the power of the coördinating centre is removed, as shown in the process of coagulation), the glycogen $(C_6H_{10}O_5)_2C_2O_2$ may then be hydrated in the liver and, as the result of the

[5] Journal of Physiology, vol. iii., p. 18.
[6] Philosophical Transactions, London, 1851.
[7] Gamgee, op. cit., p. 320.

[8] Assuming such an interchange of molecular particles, does not this offer a simple explanation of one mode of nutrition and disintegration of the tissues?

variation in the molecular interchange in the blood, appear in the tissue either as glucose $2(C_2H_6O)CO_2$, or as lactic acid $2C_3H_6O_3$, which last we know does appear in muscle when the power of the coördinating centre is removed.

The following substances, with others, would exist in the liver and tissue (urea and carbonic acid being eliminated as formed), according as the blood had a normal alkaline or abnormal reaction :—

In Liver. In Tissue.

$$4C_4H_9N_3O_2 \text{ hydrated into } \text{Urea} + \left[\left\{CO(NH_2)C_2H_5O\right\}\left\{CN,C_2H_5O,H_2O\right\}\right] \text{ oxidised into } \left\{\begin{array}{l}\text{Uric acid, glycogen, carbonic acid, and water.}\end{array}\right.$$

TABLE I. — *Blood Normal.*

$(NH_2)_2(CN)_2(CO)_3$ Uric acid.	into		$(NH_4)(CNO)(NH_2)(CN)(CO)_3$ Pseudo-uric acid.	into	Allantoin and CO_2
$(C_2H_5O)_2(C_2O_3)$ Glycogen.	into		$2C_2H_6O$ Alcohol.	into	$4CO_2+6H_2O$ or $2(C_2H_4O_2)+2H_2O$ Acetic acid.
$(NH_4)(CNO)(NH_2)(CN)(CO)_2$ Allantoin.	into	Urea +	$(NH_4)(CNO)(CO)_2$ Allanturic acid.	into	Urea + $2CO_2$

TABLE II. — *Blood Abnormal.*

$(NH_2)_2(CN)_2(CO)_3$ Uric acid.	into	Urea +	$NH_2(CN)(CO)_3$	into	$(NH_2)(CN)(C_2O_4)$ Alloxan.
$(C_2H_5O)_2(C_2O_3)$ Glycogen.	into		$2(C_2H_6O)(CO_2)$ or $2C_3H_6O_3$ Glucose. Lactic acid.	into	$6CO_2+6H_2O$
$(NH_2)(CN)C_3O_4$ Alloxan.	into	Urea +	$(H_2O)(C_2O_4)$ Mesoxalic acid.	into	$3CO_2+H_2O$ or $(H_2O)(C_2O_3)+CO_2$ Oxalic acid.

Consequently, if the power of the coördinating centre is removed or impaired, we should have, as shown in Table 2, simultaneously in the liver, and as the last stage in the process, glycogen about to be transformed, and appear in the tissue as lactic acid or as glucose, and alloxan about to be split up into urea and mesoxalic acid; and to this point I shall refer when dealing with the action of remedies.

It would seem from these hypotheses that in a state of health glycogen and glucose are abnormal constituents of muscle, the liver glycogen appearing in the tissue as $2C_3H_6O$, to be at once transformed into CO_2 and H_2O. But, if the controlling power is weakened, glycogen is transformed, and appears in the tissue as lactic acid or glucose, according to the extent to which that power is weakened, and according to the variation in the molecular change along the blood line; and these substances may also, from the same causes, appear in the blood itself. If lactic acid produces the same effect on the smaller arteries of the kidney as was seen in the experiments of Dr. Gaskell to be the effect on those of muscular tissue, and so (under certain conditions of the red blood-corpuscles to be presently referred to) act as a diuretic, the experiments of Claude Bernard seem to support very strongly the view I have here advanced as to the common origin of glucose and of lactic acid. "When we prick the mesial line in the floor of the fourth ventricle, in the centre of the space between the origins of the auditory and pneumogastric nerves we at the same time produce an exaggeration of the hepatic (saccharine) and of the renal secretions; if the puncture be effected a little higher, we very often only produce an augmentation in the quantity of the urine, which then frequently becomes charged with albuminous matters; while if the puncture be below the indicated point, the discharge of sugar alone is observed, and the urine remains turbid and scanty. . . . As these two points are very near one another, it often happens that if the instrument enters obliquely they are simultaneously wounded, and the animal's urine not only becomes superabundant but saccharine."[9]

[9] Med. Chirur. Review, Jan. 1857, p. 42.

Lastly, though it is most probable that in health the various substances are oxidised in the tissues and not in the blood, yet where there are morbid changes and abnormal products appearing in the blood, if the energy of the red blood-corpuscles as carriers of oxygen from the lungs is not lessened it seems hardly possible that oxidation of oxidisable substances should not take place there. How else can the conversion of vegetable acids be explained, which, when administered internally, are eliminated as carbonates? In acute rheumatism it would seem probable, therefore, that there is increased heat or pyrexia, partly by increased oxidation in the tissue from the smaller arteries dilating, owing to the presence of lactic acid in the blood, and partly also by the oxidation of the lactic acid in the blood itself; and that from the increased oxidation in the tissue an excessive amount of uric acid is formed, which the liver is unable to act upon; it escapes into the blood unchanged, and is eliminated by the kidneys.

If the energy of the red blood-corpuscles was in any way diminished or inhibited, and there was no increased oxidation going on from lactic acid being present in the blood, but merely dilatation of the minute arteries, then if the vessels of the kidney were affected in the same way we should have simply increased flow of urine—diabetes insipidus. Again, in diabetes mellitus as there is no rise of temperature, and the glucose is not oxidised in the blood, is the energy or number of the red blood-corpuscles inhibited or modified?—and if the energy were unrestrained, would this give rise to hyperpyrexia? We know that during the progress of disease intercurrent with diabetes the sugar does sometimes disappear from the urine, but this may be only from the introduction of some zymotic element into the blood.

Is it possible, then, that altered intensity of the "coördinating chemical centre" presiding over the changes in the tissue and in the liver, and a variable energy in the action of the red blood-corpuscles, may express the pathological relationship between hyperpyrexia, diabetes mellitus, acute rheumatism, and diabetes insipidus?

(To be concluded.)

ON RICKETS.

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AT the discussion on Rickets at the Pathological Society it was necessary to compress what I had to say into the last five minutes of an unusually long sitting, and to this was added the knowledge that the opener of the debate had still to occupy more time with his reply. Such conditions were conducive more to vigour than to precision of statement; some things that I wished to say had to be omitted, and there were too shortly put to make my full meaning intelligible. But though obscurely stated, the points themselves are not unimportant, and considering that so few facts have been added to our knowledge, I venture to put on paper in a more detailed manner what I should have said elsewhere had time permitted me, and while attention is still directed to the subject.

My text is visceral rickets, if there is such a thing. Three propositions concerning this branch of the subject have been put forward at one time or another.

1. That the spleen and liver are not enlarged in rickets—the seeming increase is due to displacement.

2. That the enlargement of the spleen and liver is as much a part of the disease as the changes in the bones—an opinion advanced by Sir Wm. Jenner and supported by Dr. Dickinson.

3. That the viscera are enlarged, but present no distinc-

tive features, and that the increase in size is due to some cause antecedent to it, and the skeletal changes—an opinion attributed to Dr. Gee and reaffirmed by Dr. Hilton Fagge.

I shall confine myself mostly to the question of splenic enlargement, because I think the facts at hand concerning the liver are hardly sufficient to enable us to form a positive opinion whether it is or is not diseased in rickets. To take the three statements in order—

1. Is the spleen enlarged, or is it not?

It is certainly enlarged in some cases of rickets—(*a*) by the unanswerable proof afforded by post-mortem examinations; (*b*) I have notes of cases in which the spleen has occupied a third at least of the abdominal cavity during life, an amount of enlargement which puts the possibility of a mere displacement in such quite out of the question; and (*c*) it is possible to separate during life those cases of rickets with splenic enlargement from those without it, almost without physical examination, by means of the peculiar pallor which the splenic cases present.

No further evidence is wanting to demonstrate that an actual increase in the size of the spleen is, at any rate, an occasional fact in the history of rickets.

Having stated that there is post-portem proof of splenic enlargement in rickets, I will next state what is the change which, I conceive, such spleens to have undergone—a point upon which there has been some difference of opinion, even in the late discussion. I have examined four cases; and, to judge from them, the spleen is large and firm, with some slight thickenings of its capsule; its section is homogeneous in appearance, from the paucity of the Malpighian corpuscles and the want of contrast which is usually afforded between them and the splenic pulp. Under the microscope the change is one of hyaline fibroid thickening of the septa and stroma at the expense of the pulp and Malpighian sheaths. I have described and figured this condition elsewhere,[1] so that it is unnecessary to say more of it here.

From this it will be seen that I am quite in accord with Dr. Dickinson, so far as the spleen is concerned, that the change is one of interstitial splenitis, if it be desirable to call it so, but perhaps better, of interstitial fibrosis, the new material being of a hyaline kind, and not necessarily, by any means, the outcome of an inflammatory state. I have not been able to detect any similar change in the liver; or, perhaps, to put this statement more guardedly, I have not been able to satisfy myself that this material exists in the rachitic liver in an abnormal quantity.

Sir Wm. Jenner alluded to some observations of his own, in which the spleen and liver in thin sections were found to be glue-like from the presence of a peculiar morbid deposit, appearances which he considered denoted something of an unusual kind, and he therefore takes exception to Dr. Dickinson's description of the change as one of interstitial fibrosis. But, if I may be allowed to say so, the observations of Sir Wm. Jenner are by no means irreconcilable with those of Dr. Dickinson. It will be allowed that the glue-like change must have been exceptionally extreme, and it is well known that this fibrous material, or hyaline fibroid, when it rises to an extreme degree, presents just such a gristly, cartilaginous, and in thin slices, glue-like appearance, as was noticed by Sir Wm. Jenner; and so far from any antagonism, we have, indeed, some remarkable facts in corroboration of the assertion that the disease is one of thickening of the stroma of certain organs. The orginal term—albuminoid—applied to this material is not by any means a bad one as applied to the morbid material itself; it is objectionable chiefly in that it has been taken to indicate something peculiar to the morbid deposit of rickets—a something not found in other diseases—whereas the material does not differ from that found in several other states, or, to speak more precisely, from the morbid material found in the spleen in chronic enlargement, from ague, and many other conditions.

When I come to the next question, What is the relation between splenic enlargement and rickets? I am no longer able to keep company with Dr. Dickinson, as I am unable to support his contention that the visceral enlargement is as much a part of the disease as are the skeletal changes. I am mostly influenced in thinking otherwise by finding that the splenic enlargement, in my experience, occurs in but a small proportion of cases of rachitis, and that when it does occur it is by no means in the worst cases. I am unable to say what number of cases of rickets have come under my notice, but, as is patent, they form a staple commodity in out-patient practice, and it is certainly a very moderate computation to say that in the last seven years I have seen 800 to 1000 cases, and it has always been my habit to examine for splenic enlargement, and all such cases have been carefully recorded. Referring to these notes I find fifty-three cases of splenic enlargement of all sorts. They are grouped as follows:—

Leucæmic	3
Rachitic (certainly)	16
Rachitic (doubtfully)	7
Cause unascertainable	14
From congenital syphilis	9
Tubercular	5—54

One of these cases being both syphilitic and rachitic has been included under both heads, explaining the fifty-*four* total. Now, considering the difficulty which exists in distinguishing slight degrees of rickets, we may include the doubtfully rickety enlargements as rickets, and we have then twenty-three cases; we might even do more, and include those cases in which the enlargement was due to no very obvious cause—a matter of fourteen more, or thirty-seven all told. And they would still—although rachitic enlargements form the greater part of all the splenic cases—form so small a proportion of all the cases of rickets, as can hardly be said to indicate that the enlargement is as much a part of the disease as the changes in the bones. I have called no spleen enlarged which was not certainly palpable below the ribs, or if the chest was sufficiently distorted to explain its altered position.

It does not seem, therefore, that the swelling of the spleen can be in any sense essential to rickets, since it occurs so seldom; and I am disposed to agree with Dr. Gee and Dr. Hilton Fagge that when it occurs it is due to some cause which antedates both it and the bone enlargement.

It may, however, be said that this argument is much weakened by the fact of congenital syphilis, as shown in my own table. Congenital syphilis is very common in the out-patient room; and if we were to enumerate all the cases and estimate the proportion in which enlargement of the spleen occurs, it would be but a small one—smaller, I think, than that of enlargement of the spleen to rickets. I have notes of nine cases only. But though such a small percentage of all the cases, it is not contested that the splenic enlargement of syphilis is an integral part of the disease, as much as the other signs of the malady. This is all true; but then, on the other hand, there is this difference—the spleen in congenital syphilis, and the liver also, are known to present certain definite cell proliferations, which are similar to those in other parts, and similar to those of syphilis in the adult. This is not so in rickets. The change in the one may be said to be specific, in the other "indifferent."

The liver of rickets appears to be, from my notes, but seldom enlarged, and when it is the increase is, as Dr. Dickinson has already stated, inconsiderable.

Passing now to the blood and its condition in rickets, I have wondered that no one has hitherto drawn attention to it in this discussion until our President alluded to the absence of observations on the subject. I know not whether Mr. Hutchinson had in his mind a chemical or microscopical examination, or both. Both would be instructive, but a chemical examination of rachitic blood presents difficulties of achievement which I have not surmounted, and I can only speak of microscopical work. Some years ago I examined the blood of many rachitic children; the notes of these were scattered, and have unfortunately been mislaid, but I well remember that in many of them its condition was a very peculiar one, though it was not always the same. In some there was simple deficiency of corpuscles, in others deficiency of colouring matter; but in most these points were not so noticeable as the remarkable variety which the size of the red corpuscles exhibited. There were three, four, and five different sizes of red corpuscles, these going with a quantity of free granules; beaded strings and dumb-bell aggregations, such as have always been held to be morbid, but the exact significance of which is still doubtful. I have lately, for the purposes of this discussion, turned my attention again to this subject, and verified my former observations, though only in a few cases.

Whatever the significance of such changes may be it cannot be disputed that they may be of considerable importance, and they are in accord, I think, with the view expressed so clearly by Mr. Hutchinson, that rickets is a diet disease. I am quite in accord with such an hypothesis. Nor

[1] New Sydenham Society: Atlas of Pathology, Fasciculus 2.

can I see any difficulties in the way of accepting it provisionally, except that it appears to be difficult to prove its truth. Children are either fed badly or assimilate badly; bad blood is formed, and bad bone follows. The microscopical appearances of the blood are such as to suggest both immaturity and poverty. These are conditions, no doubt, which might in part, according to present physiological doctrine, be due to an abnormal bone development. But, on the other hand, there is a certain amount of evidence, perhaps I ought to say a consensus of opinion rather than evidence, in favour of rickets being produced by bad feeding. Bad feeding or faulty assimilation must act primarily upon the blood, but not necessarily by producing always a constant deficiency of one particular element or excess of others. A general lack all round would, it seems to me, be the alteration which would best supply the conditions which I conceive to be necessary for the production of rickets. But this brings me to a departure from facts, to which I have hitherto attempted to keep myself, to enter upon a somewhat speculative subject—the relation between the cartilaginous changes and the spanæmia. And, first of all, I would dwell especially upon this, that the histology of rickets points to improper development more than to disease. Clinically, of course, rickets is a disease, but pathologically it is not so much disease as arrest or perversion of the developmental process, and I would venture to make this criticism upon the suggestion that has been made, that rickets mollities ossium and senile fragilitas ossium are similar processes, differing only in the age of the patient; that whereas rickets is a perverted development, those other states are degenerations of formed material, and one of them, senile fragilitas ossium, and perhaps the fragilitas ossium of mental incapacity, has some ill-defined relationship to cancer which we as yet know little of. Though all of these have certain striking features of resemblance, such as distortion of the bones, yet in their essence they are far asunder, and there is nothing in the softening bone of old age, that I can see, at all like the growth of cartilage that occurs in childhood in place of the normal growth of bone. It is a hazardous thing to attempt to say why or how any process takes place in the animal economy; but I cannot help suggesting that instead of considering rickets to be a disease we should look upon it as more a product of cultivation—a process allied to that which takes place when a gardener by particular soil essays to cultivate special parts of plants at the expense of the rest of the organism. Supposing we attempt to cultivate some flower or fern under conditions foreign to its habit, one of two things happens—unless it be so hardy that its range of accommodation is a wide one—in the process of acclimatisation it becomes starved, and dwindles, and dies; or certain abnormalities crop up which it may or may not be to our interest to try and perpetuate. And should we replace the dwarfed organism under natural conditions it speedily reverts to the old type. Is it not thus with the infant? An attempt is made to acclimatise it to conditions unnatural to its development; its juices suffer in the process, and in most cases the result is slow starvation and death. But in still a large number of cases this extreme is averted, and some of the parts become, as it were, naturalised. The lower, or least specialised, tissues stand the ordeal best; the highly specialised waste. Hence fat and connective tissue and cartilage seem to have it all their own way; muscle and bone languish. Put the child again under natural conditions, and in the great majority of cases the tissues revert to their normal habit, and the rachitis disappears completely. I take this to be proved by the fact that anything approaching to acute rickets, or, indeed, rickets of any sort, save its effects, is very uncommon after the age of six or eight. Have we any parallel case of a disease so severe as rickets, to judge from its distribution in the body, and affecting structures so important to young life as the bones, invariably getting well, if treated properly? I think not.

I would further remark that in cartilage we have to do with a peculiar tissue. It lives mostly by imbibition, and in one sense it is a coarse feeder, not very particular about quality so long as it is supplied with the requisite quantity. Witness the madder staining which can be practised upon it; the urate of soda it will tolerate with comparatively little reaction. It would seem to be more important for its well-being that it should have fluid than solids, as may readily be seen by the rapidity with which it shrinks to a mere relic when exposed to the atmosphere, and will regain its natural appearance by simply soaking in water. I can readily understand that material such as this will tolerate grave alterations in the fluids, and yet continue to thrive in some sense, nay, even to overgrow in the dropsical manner of the rachitic overgrowth, while the muscles are pale and tender from the badness of the supplies, and while all other parts are stunted and poor.

The changes in the viscera are not inconsistent with this view. An altered blood means for the tissues altered blood pressure, and this again implies considerable disturbance to the circulation in various localities with consequent changes in the tissues outside—congestion, œdema, &c., are the natural consequences. And, if we further remember the close relationship which exists between blood changes and splenic, perhaps also hepatic, enlargement, there is no lack of material to explain the occasional occurrence of swelling of these viscera in rickets.

Nor do I think that such experiments as those given to us by Dr. Baxter tell against what I have here put forward. For although conducted, as they would certainly be by so shrewd and cautious an observer, with the greatest precision attainable, they are, they cannot be otherwise than, rough handed, when compared with the slow process of modification which goes on in the fluids of the infant under the many modes of artificial feeding adopted in this country, and protected as the system is in a measure by the obvious fact that what does not please—that is, is not suitable to, an infant's stomach—will be rejected. I do not doubt that an infant's stomach has, so to speak, a blind eye, but I do doubt whether many of the harmful compounds administered to it find this out, and enter the circulating fluids. And for this reason, because I believe it to be almost, if not quite, impossible so to direct the means sufficiently insidiously and persistently to the end aimed at—to be impossible, in fact, to perform any experiment which shall fulfil the required conditions—I dissent altogether from the doctrine of my colleague Mr. Lucas, that rickets can be induced with certainty by artificial feeding. The experiment is performed for us unconsciously in hundreds of cases by mothers with their children, and with a like result to that of Dr. Baxter with his puppies, the botanist with his ferns, of starvation, wasting, and death. But rickets can only be produced by a very slow process of careful cultivation, and provided that the gastric apparatus can be made to work subserviently to such an end. I see no reason with regard to animals why we should expect to produce rickets at all. Is not the rickets of animals expressed in the light porous periostitis-like bone which is to be found in most museums as a common disease of the lower animals.

I can only allude to other points very shortly. And, first, as to fœtal rickets. It appears to be assumed that if once fœtal rickets is proved to have an existence the diet disease hypothesis is no longer tenable. But does this follow? Why should the fœtus be exempted altogether from diet diseases? It obtains its food, it is true, already assimilated as blood; but if a carefully adjusted and gradually adapted badness of blood be the cause of rickets, such a cause must surely operate sometimes in the fœtus. I would rather hold to the opposite opinion—that, if it can be shown that fœtal rickets has not even an occasional existence, a strong blow is thereby given to the diet disease hypothesis.

The next question I would ask is this, Is rickets only to be produced by one cause or set of conditions? I ask this because it seems again to be assumed that if the condition can be shown to be associated with cretinism it is no longer rickets. I am not prepared to admit this. I have elsewhere attempted to show[1] that arrested development of the brain is a condition which favours excessive growth of the least specialised tissues, connective tissue (subcutaneous) and fat more particularly, but possibly cartilage also. From what I have seen of the cretin condition, particularly in a specimen lately presented to the College of Surgeons by Dr. Hermann, it seems to be an exaggerated rickets. The bones are all ends. The cartilaginous ends are exceedingly large; the shafts unusually small. Is it not possible that this may prove to be a similar condition to that which we call rickets, though owning an entirely distinct origin?

The strongest argument against the view here taken of the nature of rickets may, I think, be derived from the fact that the disease is so little prevalent in other countries that it has received the name of the English disease; yet I find it difficult to suppose, as does Dr. Baxter, that artificial feeding is so very different, in the United States for example,

[1] On Sporadic Cretinism and Myxœdema (Med. Times and Gaz., 1880).

from what it is here. I am not prepared to combat fully an objection of this kind at the present time, but I may just remind the reader that it has been one of my objects in the present paper to show that artificial feeding can only produce rickets under certain conditions, which may well be absent either in whole or part in other countries.

Weymouth-street, W.

THE SIMULATION OF SOMNAMBULISM.

By CHARLES RICHET, M.D. PARIS.

(Concluded from p. 9.)

ANALGESIA and anæsthesia are very often exhibited by somnambulists. These two phenomena are constant, or nearly so. It is now the fashion to say that the anæsthesia is due to simulation. Certainly, in considering the matter in a general way, insensibility may be feigned. But how many persons are there who would have the courage to bear without serious reason pricks on the face, on the nostrils, or hands; to allow their hair to be plucked out, and the conjunctiva, the nose, and the ears to be tickled; to have pins thrust into the arms; to drink nauseous liquids; to breathe with delight ammonia or sulphurous acid? Such are the tortures they would endure for the sole pleasure of duping the simple physician, who looks curiously on and takes notes. Nearly all somnambulists behave thus. They oppose no resistance to every test; they do not push them away, nor tremble, remaining impassive and vacant, braving without moving a muscle tests as disinterested as they are painful. Must we suppose that they exhibit heroism (and a very misplaced heroism) or anæsthesia?

I could multiply examples to prove how absurd is the hypothesis of simulation. Thus, nothing but the fact of being able to vomit at will indicates, indeed, that there is a psychical state different from the normal. Who is there who could vomit because one said to him, "What a bad smell!" It is, however, a constant phenomenon with the somnambulised; and to provoke the vomiting there is no need of a more complicated method. A somnambulist weeps when told to weep, sheds a flood of tears, and loudly sobs. Can we believe that it is easy to weep at will? Make the experiment on oneself, and see how impossible it is. *Amicus noster quidem quem ad somnitationem facile suscitamamus, si de lubidinosis rebus loquor, statim it erectionem. Si jubemus ut mingat, mingit; et restem fodat.*

I recently witnessed an accident which might have been very grave, but which fortunately had no serious consequence. It was in the case of a young woman who will be frequently referred to in the course of this article, and who is an excellent magnetic subject. Wishing to excite fright in her, I said to her, "See, I take your arm, and I cut it. Look at the blood flowing." Immediately, without a cry or a gesture, she fell flat down on the ground, as if dead. In fact, life had ceased temporarily. The heart no longer beat, there was no respiratory movement; this state lasted for about half a minute—a century of anguish for me—then a deep respiration told of the return of vital phenomena. Perhaps it will be said, this syncope was only a clever piece of acting? However, at the risk of being thought to be very simple, I should not wish to try this experiment again at any price.

We may then, it seems, if not find an absolute or irrefutable proof, at least accumulate very convincing proofs to demonstrate that there is a somnambulistic condition. Let us now examine the objections opposed to it. The following are, if I am not mistaken, the chief:—

First objection.—The phenomena of somnambulism are incompatible with the facts of science. It is impossible to admit the "pass" can produce sleep, that a fluid escapes from the body at the will of the magnetiser, that thought is transmitted without an external manifestation, that vision is performed by the epigastrium, audition by the palm of the hand, and perception of taste by the forehead. It is easy to make answer: Somnambulism—this neurosis, whose causes and nature are still so mysterious—has nothing to do with the explanations attempted to account for it by charlatans. It is not a question of declining to refute their more or less interested vagaries, but of studying and verifying what has been seen by serious *savants* worthy of respect. All those who, instead of applying themselves to prove the inanity of the miracles performed by the somnambulised, have tried to see for themselves, have soon been convinced that by the influence of "passes," or by the "fixed gaze," there is produced a special neurosis, with well determined characteristics. It is easy to deny such or such grotesque tales, but what will they prove except that there are dupes and rogues mixed up in this problem of pathological physiology? It would seem, in view of so many widespread errors, that a number of truths must be found mingled with them. If it were all phantasmagory or simulation not only would magnetism not have been established, but it would not have been promulgated, and would have disappeared without leaving a trace behind. Error can only triumph by reason of the truth it enshrines.

Besides, we have not such perfect and precise notions on the nature and functions of the nervous system that we can deny the possibility of such or such a phenomenon. The experimental method should always guide us, and *à priori* denials ought, like *à priori* affirmations, to be banished from scientific discussions. In truth, as regards somnambulism, the denials have always been *à priori*. I do not believe that an experimenter, supported by a sufficient number of facts, has come to the conclusion that somnambulism is not a fact. The denial has to be supported by reasoning, and not by experiment. No one yet, to my knowledge, has been able to say, "I have tried to hypnotise four persons, at different times, by employing the usual procedure, and I have obtained no result." So far, people have been contented to smile, and to say, "It is impossible." Such a refutation seems to me insufficient.

Second objection.—Everything observed is inconstant, irregular, mobile.[1] No fixed rule, the phenomena observed varying with every observer, and with each subject. What is predicted is not produced, and what is not predicted is produced. This objection is based on a real fact. Indeed, the first time that an individual is hypnotised, she finds herself in a special condition, which requires a real education. According as the experimenter desires to provoke this or that phenomenon, he will be able to direct the attention of the subject to it, and to act so that this phenomenon is produced. That simply means that will, habit, and education play an important part in the manifestations of the somnambulic neurosis. But this vague and unconscious influence cannot be regarded as simulation. When a lunatic reasons, reflects, meditates, he often shows evidence of much logic. Will it be said that he is not mad? Only people who know nothing of medicine would think so. In fact, a lunatic and a somnambulist reason, reflect, meditate, and it would be absurd therefore to conclude that they are simulating.

There are often seen certain strange psychological phenomena which it is necessary to know. Some hypnotised subjects regard their hallucinations as fictions, and say that what they see before them, with forms apparently real, is not reality. This is observed in dreaming, and also in insanity. We often dream of monsters so strange and visions so absurd that we cannot believe them. There occurs also a sort of doubling of consciousness; we dream and we know that we are dealing with a dream, and we make great efforts to drive away the vision which oppresses us. So do those who have hallucinations hear voices which they very well know to be subjective. So also certain somnambulists are conscious of their state, and thus a curious antagonism is set up in them. Their imagination shows them the real form of things, and their intelligence understands their absurdity. That is why they often exhibit contradictions, which, to a superficial observer, would seem to reveal simulation. The fact was very striking with a patient at Beaujon, quite a young girl, whom I hypnotised on several occasions with the greatest facility. I told her that I was going to perform a painful operation on her—amputation of the arm, for ex-

[1] In an article in *The Times*, where a paper I contributed to the *Revue des Deux Mondes*, on "Demoniacs, Past and Present," is analysed, I am thus laid open to reproach, it being objected that it is impossible to describe the changing and fugitive phenomena of hysteria. As much, said the critic, might one try to fix on a photographic plate the mobile surface of the ocean. Now, this observation, which appears to me to be of slight foundation, and little justified by fact, is joined by another reproach quite as singular: it is that things are spoken of which we ought to be silent about; that we provoke, by the description of hysteria, attacks of this disease; that we contribute, in a word, not to the knowledge, but to the extension of the disease. Surely this is scientific prudery!

ample. She cried out with pain, wept abundantly, and thought she saw the blood flow; but almost at the same moment she understood it was a fiction, and laughed through her tears. Often also, when one makes imaginary voyages with hypnotised subjects, they know full well they are on their own couch or in their bed, and yet they see the regions where we have had the fancy to lead them; just as in ordinary sleep, we find ourselves transported into far off countries, without forgetting, however, that we are tranquilly asleep in our own room.

However seldom one may have been present with some case at the gymnastic performances which the professed magnetisers present to the public, one is convinced, on the one hand, that the *subjects* are, indeed, hypnotised; on the other hand, that they also practise trickeries. There are somnambulists who simulate. These two terms are not contradictory, as might be wrongly supposed. In fact, a hypnotised woman does not so far differ from the condition of her waking state that she cannot understand her situation, reflect, and simulate. She is hypnotised, as all the physiological phenomena she presents show (catalepsy, contraction, anæsthesia, fibrillar movement of the eyelids, movements of the eyes, suppression of movements of deglutition). But whilst being indeed asleep she plays her part—tries to divine the future; to read distinctly in the body of the patients who consult her; to divine, by a lock of hair, the age, the character, or the health of anybody. These divinations form part of her trade. She knows it, and conforms to it. She is, however, really asleep, and it is, indeed, owing to somnambulism that she can perform all these practices. If she were awakened she would be forced to expend prodigious mental activity, and to support unbearable muscular fatigue. We have seen *imbeciles* simulate madness, just as there are somnambulists (really hypnotised) who simulate lucid sleep. It would require prodigies of dexterity, and the muscular force of an athlete, to go through half the astonishing exercises which a somnambulist can easily perform, thanks to the cataleptic state of her muscles. The famous Lucile, whom everyone saw at Paris, two or three years ago was really hypnotised. But, although hypnotised, she well knew that she was on the stage playing her part before the public, and succeeded in her tricks with the regularity of an actress who plies her profession honestly.

All these characters—diversity, inconstancy, irregularity—are perfectly explained by the prodigious complexity of the phenomena of that mystery—the mind. The brain is a mechanism a thousand times more complex than a flute, and yet an ignorant person could not play on this instrument if he had not previously learnt how to handle it. "You would play upon me," says Hamlet to the emissary of the king, his uncle—"you would seem to know my stops; you would pluck out the heart of my mystery; you would sound me from my lowest note to the top of my compass; and there is much music, excellent voice, in this little organ; yet cannot you make it speak? 'Sblood, do you think I am easier to be played on than a pipe?"

These words of Hamlet may be addressed to those who find the psychical phenomena of somnambulism too inconstant to be scientific. Suppose fifty inexperienced individuals attempting to play the same air on the same flute; they only elicit discordant and rude sounds in fifty different times. Why, then, be astonished that physicians or observers, all very ignorant of the intimate nature of the nervous system, only obtain contradictory results? To my thinking it is more surprising that, in spite of our profound ignorance, in spite of the almost infinite diversity of the experimental conditions, there is yet so much analogy between the phenomena observed. We ought to be really struck by the resemblances rather than the differences, for the latter are of small account relatively to what they might be. For my part, proceeding always in the same manner, I have invariably obtained sufficiently concordant results, in spite of the enormous differences in the subjects submitted to experiment.

The differing aspects of the same disease are sometimes more marked than the different aspects of somnambulism. Besides, why not compare it to a disease? It has a period of onset, a stationary period, and a critical period, constant fundamental symptoms, and accessory or inconstant symptoms. It always resembles itself.

To sum up, it can be proved that somnambulism is a real fact, if not by an absolute proof, at least by the whole of the proofs which plainly demonstrate that the hypothesis of simulation is absurd. Scientific scepticism is an excellent method, but it must not be pushed to the point that everything is either illusion or deception. To admit that hundreds of observers, ordinarily sagacious and reserved, have allowed themselves to be deceived by mystifications, that these mystifications are being incessantly practised, bringing no gain but unbearable vexation to those who play with them, and to suppose that this pleasantry may be repeated, without modification, for a century, in most diverse countries, is to fall into an excess of prudence. For every man who has examined the question it is as absurd to doubt the reality of somnambulism as the reality of epilepsy. After all, if there are still people who hesitate, let them see for themselves, let them study, let them experiment, they will soon be convinced that their doubt is not justified, so clear and striking are the facts, so much do they overcome all hesitation by their greater force.

CASE OF STRYCHNINE POISONING TREATED SUCCESSFULLY WITH BROMIDE OF POTASSIUM AND CHLORAL.

BY ENGLEDUE PRIDEAUX, L.R.C.P. LOND., M.R.C.S. ENG.

THE following case occurred some years ago, but for obvious reasons I have been unable to send it for publication until the present time. The facts of the case are as follows:—

At an institution with which I was connected there was a stock mixture kept, containing bicarbonate of soda 10 grs., carbonate of ammonia 3 grs., ammonio-citrate of iron 5 grs., and solution of strychnia 5 minims, in an ounce of water. This mixture was frequently ordered for out-patients in cases of atonic dyspepsia.

One morning, after seeing the out-patients, I happened to walk into the dispensary and sat down at the dispenser's desk, he having gone out; whilst writing some memoranda my eye was caught by a pencil statement on the blotting paper of a calculation of the contents of the stock bottle containing the mixture of citrate of iron and strychnia, and I noticed that in jotting down the whole amount of each constituent the dispenser had substituted ounces for drachms of the solution of strychnia. I sent for the dispenser at once, and on tasting the contents of the stock bottle it was evident that the mistake had been made, and three lots of about half a pint each had been given out. The dispenser explained that whilst giving out the medicines the stock bottle ran short, and he proceeded to refill it, making it up whilst a number of patients were waiting, and in his hurry the mistake occurred. After taxing our memories as to which patients were taking the mixture, we were able to find out the new ones, but not all those to whom it had been repeated. We went to the addresses of all we could find, and under some pretext got the medicine back, but after all it was evident that one, perhaps two, still remained, and these we were unable to trace.

Finding there was no help for it I set to work, so as to be prepared, and remained in-doors all day. After much consideration and consulting the books I had, I resolved to rely upon bromide of potassium and chloral, as being the drugs which in their action were most antagonistic to strychnia. I therefore prepared some strong solutions and waited events.

About ten o'clock a message came to ask me to go and see Mrs. C——, who was having very bad fits. I at once put the remedies in my pocket, with a bottle of chloroform, and, accompanied by a medical friend to whom I had related the circumstances, started off to the address of Mrs. C——, whom I at once recollected as a patient who had been taking the citrate of iron and strychnia mixture.

From the person who came (a half-witted woman, the sister of the patient) I learnt that Mrs. C—— had been out at work in the open air all day, and coming home between five and six had her tea, and some time after tea took a good dose of medicine; in the evening, while standing at the door of the place she lived in, she fell down in a fit and had had them ever since, and was then said to be dying. The messenger had been to a doctor in her neighbourhood, who had refused to go. She was much excited when she came for me, and declared her sister had been poisoned. As far as I

could gather, some two or three hours or more had elapsed from the time her sister had taken the medicine to the time she was taken ill, and the fits had been increasing in frequency and strength during the past hour.

On arriving at the house I found the patient, a woman of about fifty years of age, lying on a mattress upon the floor, unable to speak and perfectly rigid, and in a condition of constantly recurring opisthotonos, the convulsions succeeding one another with great rapidity, with all the appearances of acute strychnia poisoning. The pulse was slightly quickened, but otherwise fair. As soon as the jaws were relaxed, I administered half an ounce of bromide of potassium in solution with one drachm of chloral. After a quarter of an hour the spasms began to materially abate, and the muscles relaxed in a marked degree. I then administered another half ounce of bromide in solution, and in half an hour there was almost perfect relaxation, with slight spasms recurring at much longer intervals. After remaining with the patient for some time, and finding the spasms did not recur in their intensity, but were becoming much slighter, and only occasional, we left, leaving another ounce of bromide to be given in divided doses of two drachms every four hours during the night. We were shown also an old wineglass, with the foot broken off, and told that she had poured out the medicine into this without measuring it, taking nearly or about a full glass, as she said to them "To make up for not taking any during the day." I took away the glass, and afterwards found it contained a full two ounces and a half.

The next day I visited the patient early in the morning, anxious to know the progress of the case. I found her in a very feeble state, and to my surprise quite unable to raise herself, and able hardly to move a muscle; indeed, she seemed like a sheet of wet blotting-paper, and was almost completely paralysed; her water had run away in great excess, and a large quantity of liquid fæces. Her pulse was slow and markedly feeble. She had taken half of the quantity of bromide left. I stopped its administration, and ordered strong beef-tea and milk with a little brandy at frequent intervals. On the evening of the same day there was little alteration.

From this time she progressed towards convalescence very slowly and gradually, her recovery being much retarded owing to the inability of her friends to obtain sufficient and proper nourishment. After three days she was able to raise herself, and had regained power over the sphincters, and on the fifth day was able to sit up. She was then removed to the union house, where she rapidly recovered.

The woman must have taken, from the size of the glass she used, fully two ounces of the wrong mixture, each ounce containing forty minims of liq. strychniæ, P.B.—that is, eighty minims in all, nearly three-quarters of a grain of strychnia. I have not been able to find any record of the administration of so large a dose of bromide of potassium, but it appeared to me necessary to give as large a dose as possible, inasmuch as the poison had been in the stomach for a considerable time, and it had all, or nearly all, been absorbed. The symptoms had been increasing in severity, and from their intensity were evidently attaining their maximum, and must have soon produced death by interference with the function of respiration, so that to give smaller divided doses would have been useless. The effect of the first dose was remarkably complete, temporary muscular relaxation occurring in about twenty minutes, and the succeeding convulsions becoming rapidly altered in character.

I believe that the complete muscular paralysis which occurred, and was so slowly recovered from, was owing to the partial abolition of the functions of the spinal cord, caused by the exhibition of the remedy, and was not due to nerve or muscular exhaustion consequent upon the extreme excitation and activity induced by the poison.

Wellington, Somerset.

LIFEBOAT SERVICES IN 1880.—A list of the services rendered to shipwrecked crews by the lifeboats of the National Institution during the storms of the year which has just closed, shows a total of 577 lives and 27 vessels saved from destruction. In the same period the Lifeboat Institution granted rewards for saving 120 lives by fishing and other boats, making a total of 697 lives saved. Since its formation the society has contributed to the rescue of 27,600 shipwrecked persons.

CASE OF RECURRENT PEMPHIGUS PRURIGINOSUS FOLLOWING CHECKING OF THE MENSES.

BY W. A. DUNCAN, M.D.

MISS B——, aged twenty-five, has always had good health. First began to menstruate when fourteen and a half years old; since then "the periods" have appeared regularly every month.

On July 28th, whilst out walking, was caught in a storm and got wet through; the same night she felt chilly and languid.

Next morning (29th) patient noticed that the menses, which had commenced the previous day, were stopped. She now complained of headache, nausea, and general malaise, together with a peculiar tingling sensation in both hands. These symptoms continued till August 1st, when I perceived numerous small round papules on the palmar aspects of both hands, and also on the sides of all the fingers. The hands were somewhat swollen and slightly œdematous, but the skin was not inflamed. The sensation of pricking and tension was so great that the patient could obtain no sleep without the aid of a morphia draught. A saline mixture was ordered every three hours, and a lead lotion (1 in 20) to be kept constantly applied to the affected parts.

On Aug. 2nd the papules had developed into vesicles, which, in irregular groups, were situated most accurately over the course of the median and ulnar nerves on the palms and fingers; even the small palmar cutaneous branches of both these nerves over the anterior annular ligaments had their appropriate vesicles. The swelling and œdema were more marked, and there was intense irritation and pricking.

Next day (Aug. 3rd) the vesicles along the sides of the fingers had developed into round bullæ, from a quarter of an inch to half an inch in diameter, and from their size they caused the fingers to become widely separated. On pricking these bullæ decided relief was obtained, and a perfectly clear, colourless fluid escaped; in some, however, the contents, though perfectly transparent, were of more consistence, as only a slight amount of fluid followed the puncture. On the palms the bullæ were much less developed, the largest being about the size of a pea, and the patient complained of great pain in them. "As if the palms would burst," she said. The lead lotion was therefore discontinued, and both hands were ordered to be enveloped in large bread poultices, and the morphia draught to be repeated if necessary.

Aug. 4.—Patient passed a better night; did not require the draught. The feeling of tension is much relieved, doubtless due to the poultices softening the epidermis. The bullæ on palms more developed, and several were punctured to allow the fluid (which was in each one colourless) to escape. The swelling and œdema still considerable. To continue poultices.

8th.—Patient expresses herself as altogether better, though there is still great irritation of the hands. Ordered to take a mixture containing bromide of potassium and liquid extract of bark thrice daily, to discontinue poultices, and apply constantly a lead and belladonna lotion; daily carriage exercise was also enjoined. Under this treatment the irritation and swelling gradually subsided, and on the 14th the hands and fingers were of natural size, and the skin was peeling off.

18th.—Palmar surface of both hands and fingers now denuded of old skin, exposing the new epidermis of a reddish colour, which itches excessively. The parts were ordered to be painted with a lotion consisting of equal parts of glycerole of lead and vaseline.

23rd.—Patient altogether better. Very little irritation.

25th.—Menstruating.

27th.—Although every possible care was taken to avoid catching cold, "the period" again stopped suddenly last evening; and on my visit to-day the patient (after passing a restless night) is not so well. Several papules appear on the sides of the fingers, and a few on the palms. The swelling and irritation are not so severe as on the first attack. Ordered an effervescing saline mixture, and the lead and belladonna lotion.

The further progress of this case is briefly as follows:—

Bullæ again developed, but not so large nor so numerous, and they gradually dried up under the use of the lotion.

On Sept. 1st I advised patient to go to the seaside in order to recruit her health before the next period.

Sept. 20th.—Just returned from Boulogne, where she has been since the 3rd. Feels quite strong. Hands are much better, but still continue to itch a good deal.

Oct. 18th.—Continues well, with the exception of some irritation of the hands, the skin of which is harsh and dry. No bullæ appeared at the last period, but the hands became hot and painful. Has been taking a citrate of iron mixture, with phosphorus and zinc pills, for several weeks.

This case is very interesting from several points: 1st, etiology; 2nd, character and recurrence of the eruption; 3rd, treatment adopted.

(*a*) With regard to pemphigus, Tilbury Fox, in his work on Skin Diseases, says its causation is involved in obscurity. In this case, however, the chill, which resulted in checking the menses, evidently was the cause; but how this acted I am not quite prepared to say, unless by causing general disturbance of the nervous system, and especially the terminal distribution of the median and ulnar nerves, thus producing localised changes in the vaso-motor supply to the affected parts.

(*b*) The symmetrical character of the eruption was well marked, and at first the case seemed to me to be a rare one of symmetrical herpes. However, the formation of bullæ on the second day showed I was mistaken. Tilbury Fox mentions two cases[1] he had seen in which the eruption was more or less symmetrical, and which he described as partly herpetic and partly pemphigoid. That the eruption recurred when the menses were again suddenly checked shows that the two stand in relation to one another as cause and effect.

(*c*) With regard to treatment, constitutionally it has been of a tonic nature. Unfortunately my patient is one of those individuals whose idiosyncrasy prevents them taking either quinine or arsenic. Locally, the greatest relief was obtained by the application of poultices, and afterwards of the lotion of glycerole of lead and vaseline. However, I am bound to say that, although much diminished, the irritation still continues to cause a good deal of annoyance, but this will most probably disappear after some further treatment.

Nov. 15th.—Since writing the above remarks the patient has continued to improve, and is now perfectly well. Under the use of the vaseline ointment all irritation of the hands has disappeared; the skin is of its natural appearance, and her monthly "period," which has just passed, was quite normal.

Croydon.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium

KING'S COLLEGE HOSPITAL.

FRACTURE OF THE INTERNAL CONDYLE OF THE HUMERUS; DISEASE OF THE JOINT; EXCISION.

(Under the care of Mr. HENRY SMITH.)

FOR the following notes we are indebted to Mr. S. Farmer, house-surgeon.

George K——, aged eighteen, was admitted into Fisk ward on November 11th, 1880. Ten days before admission he struck his left elbow against a piece of wood. This blow was followed by severe pain, which soon abated somewhat, so that he was able to follow his occupation for one day after the accident. He was, however, never free from pain, and in consequence of its increasing severity he was obliged to cease working. On November 4th (three days after the accident), linseed-meal poultices were applied and continued up to the time of admission.

On admission the patient was an ill-developed boy, and on inquiry it was ascertained that he was a seven months' child. He had always been unhealthy, and he had a scrofulous abscess in the left submaxillary region. The right upper limb was found to be swollen from the middle of the arm to the middle of the forearm. It was likewise hot, œdematous, painful, and very tender, the tenderness being most marked over the internal condyle. No fluctuation could be detected, nor was there pain on pressing the joint surfaces together. Temperature 101°; pulse 100. An angular splint was put on and ice was applied over the elbow, and a draught of ten drops of tincture of opium was given. A quinine and iron mixture and cod-liver oil were also ordered.

On the 12th the arm was still extremely painful, the ice having failed to give any relief. Hot fomentations were applied and the pain was relieved. In the morning the temperature was 99·3°; evening temperature 101·1°. On the 13th the pain and tenderness were less and the swelling had decreased. Morning temperature 98·2°; evening temperature 98·4°. On the 10th the pain was entirely gone, but the swelling still remained. He could move the joint slightly, but extreme movements gave great pain. Morning temperature 99·1°; evening temperature 100·2°. On the 19th the pain had again returned. The arm remained in nearly the same condition until Dec. 10th: there was no pain except on pressing over the joint. The swelling never disappeared. The general symptoms during this time were of a hectic character, with evening rises of temperature of from 1° to 2°; morning temperature varied from 98° to 98·3°; evening temperature varied from 99·2° to 100·4°. A fluctuating swelling could be felt on the posterior surface of the arm, two inches above the joint; and on the 11th the abscess was opened antiseptically; about half an ounce of pus escaped; dead bone could be felt at the posterior surface of the internal condyle. A large drainage-tube, two inches in length, was introduced. Morning temperature 99°; evening temperature 98·3°.

On the 16th the arm was very painful; morning temperature 100°; evening temperature 102°. And on the following day, though the arm was less painful, there was very free discharge. Morning temperature 100°; evening temperature 102·4°. It was decided to excise the joint. Accordingly, on the 18th, ether was given, and Mr. Henry Smith excised the joint in the usual manner. On opening into the joint the cartilages were found to be healthy. The internal condyle was diseased, and had been fractured. A sequestrum of bone the size of an almond was found above the trochlear surface of the humerus. The cartilage over the trochlear surface was detached, but was not diseased. The whole of the synovial membrane was thickened and diseased. All the articular surfaces were removed. There was free hæmorrhage, owing to the vascularity of the parts. A drainage-tube five inches long was passed between the ends of the bones. The operation was done antiseptically. The arm was laid on a cushion after the operation, and no splint was applied. Morning temperature 101·2°; evening temperature 98·2°. He passed a good night, but next morning the face was flushed, and the skin was hot and dry. The arm was dressed, and there was very free discharge. There was some tension. Morning temperature 103°; pulse 100. Evening temperature 103·1°; pulse 104. On the 20th the arm was dressed. The wound had healed by first intention, except at entrance and exit of drainage-tube. Morning temperature 99·2°; evening temperature 99·1°. On the 21st the discharge was much less. Morning temperature 98·1°; evening temperature 98·2°.

The boy has continued to improve. He has no pain; the temperature remains normal. He still remains under observation in the hospital, and has every prospect of recovering a useful arm.

ST. MARY'S HOSPITAL, MANCHESTER.

CASE OF PARALYSIS OF RIGHT LOWER EXTREMITY, FOLLOWING AN INJURY TO THE SACRAL PLEXUS DURING A DIFFICULT LABOUR.

(Under the care of Dr. LLOYD ROBERTS.)

FOR the following notes we are indebted to Dr. Walter.

A woman, aged twenty-eight, was admitted on Dec. 15th, 1879, suffering from wasting and loss of power of the right lower extremity. Her ailment dated back to her second confinement, which took place seven weeks previous to her coming into hospital. It was stated by the medical

[1] Skin Diseases, 2nd ed., p. 221.

attendant that the labour lasted twelve hours, and that during the last three hours the pains, though very strong and frequent, were quite ineffectual in producing any advance of the presenting part, the head remaining during that time engaged in the pelvic brim. The forceps were then applied, and delivery accomplished with much difficulty. The child was large and stillborn. No anæsthetic was used, and the patient complained during delivery of violent pain and cramp in her right thigh, which continued without intermission until the child was born.

Next morning her leg and foot were "cold" and "numb," and there was complete loss of motion throughout the whole limb. This condition remained unaltered until the seventh day, when the patient again experienced the most intense pain along the course of the sciatic nerve; two days later slight swelling of the ankle and dorsum of the foot took place, the numbness and loss of sensation disappearing almost simultaneously, though the loss of motion continued complete.

During the seven weeks that elapsed before the patient was admitted into the hospital, she was unable to leave her bed, and at the time of admission the condition of the limb was as follows:—Well-marked wasting of the entire leg and thigh, the muscles of the calf being most atrophied, then those of the hamstring muscles, and, to a lesser degree, the gluteus maximus. There was slight œdema of the ankle, and the foot hung loosely, with the toes pointing forwards and downwards. Abduction and adduction of the foot were impossible, and flexion on the ankle-joint was very imperfectly accomplished. No movement of the leg could be performed. Cutaneous sensibility of the limb was normal, excepting over a small area in front of the ankle, where the œdema existed, and where also the patient complained of much pain. The muscles of the limb responded to the electric current less readily than those of the opposite side. Reflex movements were impaired, but there was no paralysis of bladder or rectum. The patient remained in the hospital a month, and had then recovered so far as to be able to walk across the ward, with assistance.

The treatment adopted was friction and shampooing of the limb, with the daily application of the electric current.

After she was made an out-patient she attended the hospital three days a week to be faradised. At the end of six months the paralysis had completely disappeared, and the patient was in excellent health.

Remarks.—The completeness of the paralysis that existed in this case warrants the supposition that considerable damage to the nerve trunk had taken place; fortunately these changes were not permanent, and as soon as the inflammatory products were absorbed the functions of the nerve returned, and the recovery was no doubt accelerated by the prolonged and steady use of the electric current.

The clinical history affords a well-marked example of paralysis from compression, and illustrates forcibly how hopeful prognosis may be in those forms of paralysis where the lesion is peripheral.

GENERAL HOSPITAL, SHANGHAI.

MULTIPLE LIVER ABSCESS IN CONNEXION WITH DYSENTERY; DEATH; REMARKS.

(Under the care of Dr. EDWARD HENDERSON.)

C. B——, a German, aged twenty-four, resident for several years in Hongkong and Shanghai, was admitted on the 24th of September, having been ill for two weeks, and suffering from "dysentery." He was thin, having, he said, lost flesh greatly since the beginning of his illness. He was very anæmic. He had had no rigors at any time during his illness, and had not experienced any well-marked pain in the region of the liver. There were slight jaundice and great prostration, with a peculiar odour of body and breath suggestive of general blood-poisoning. The pulse was 94, weak; the temperature on admission (afternoon) 101° Fahr. There was flatulent distension of the bowels, with general abdominal tenderness, the right hypochondrium and right iliac region being especially sensitive and resistant. The liver was apparently enlarged; in the right nipple-line comparative dulness began on the fifth rib and extended to a point half an inch below the costal margin, measuring in all six and a quarter inches. There was absolute dulness on the sixth rib, an inch and a quarter lower down. No friction sounds were audible in or near this area. The splenic dulness was normal; the urine was slightly albuminous. During the six days which followed admission the condition was briefly as follows:—General weakness progressively increasing; pulse weak, varying between 94 and 120; temperature very irregular, varying between 98·4° and 102°; no rigors; sweating at times profuse. No cough or vomiting. Motions averaging six in twenty-four hours, of the consistence of gruel, yellow-ochre in colour, slimy, not specially offensive, and not apparently containing blood. By the 30th of September the area of dulness in the right nipple-line had increased by at least half an inch, but the intercostal hollows remained unaltered; no distended vein had appeared on the surface, and no friction sounds were to be heard. At this time it was thought proper to aspirate the liver, though the symptoms rather indicated the multiple abscesses of pyæmia than the presence of a single (tropical) abscess. Three punctures were made—viz., in the right nipple-line between the sixth and seventh ribs; in the anterior axillary line between the seventh and eighth ribs; below the costal margin (in an upward direction) near the anterior extremity of the ninth rib. No pus flowed into the receiver by any of these punctures while the needle remained imbedded in the tissues, but about half a teaspoonful of thick pus mixed with blood was sucked into the bottle when air entered the instrument as the needle was withdrawn; the point of the needle did not at any time feel free as if lying in a cavity. The patient's general condition seemed to be somewhat improved on the following day, but after that he sank gradually, and died on the fourth, expressing himself to the last as free from localised or special pain. The diagnosis was dysenteric ulceration of the bowel, with multiple hepatic abscess, the post-mortem examination confirming this. The liver was moderately and uniformly enlarged, and its substance studded with abscesses in all stages of development, and varying in size from the dimensions of a pea to that of a large walnut. No abscess was found elsewhere in the body. The under surface of the liver, especially along its anterior margin, was firmly adherent to the peritoneal investments of the viscera in its neighbourhood, but only a few apparently recent adhesions had formed between the lower surface and the parietes; these last were in the axillary region. The great gut was deeply and extensively ulcerated, but only one small superficial (catarrhal) ulcer was found in the small intestine.

Remarks by Dr. HENDERSON. — Cases of this kind are rare in Shanghai, the usual liver lesion in connexion with bowel ulceration being the single, so-called tropical, abscess. It is of importance to note the significance of the "typhoid state" in connexion with diarrhœa and dysentery in the East. Should this condition be developed early in the history of a case, my observations lead me to suspect either sloughing of a large tract of the mucous membrane or the coexistence of liver abscess. Such cases have more than once been mistaken for cases of enteric fever, their real nature being only recognised when the liver enlargement had passed beyond the limit of any ordinary typhoid swelling. A case of the kind occurred in my own practice in January, 1874, and I failed to recognise its true nature until within three or four days of my patient's death; he died on the twenty-second day of his illness. The temperature trace in this case during the first week closely resembled the trace of enteric fever; there was meteorism, and spots resembling those seen in typhoid fever appeared and disappeared on the surface of the abdomen; there were no rigors, and but little sweating till near the end; the patient only once complained of pain in the hepatic region, and called it "spasm." Yet the post-mortem examination showed the bowel lesion to be that of dysentery, and the right lobe was occupied by a single large recent abscess (with adhesions), which should have been emptied during the patient's life, had its presence been recognised sufficiently early. In the case at present under discussion, such an error in diagnosis was precluded by the temperature trace, the absence of splenic enlargement, and the presence of those other symptoms which indicated from the first a condition of general blood-poisoning. The diagnosis of multiple abscess was strengthened by the use of the aspirator, a medium-sized needle, feeling as if always fixed in the tissues, and withdrawing only a small quantity of pus from three punctures made sufficiently far apart from one another. In Shanghai, where the usual liver lesion in connexion with bowel disease is a single abscess, the patient, even in such a case as the

one just recorded, should always have the benefit of the doubt; and if pus flows at all freely by the aspirator, its use should, as a rule, be immediately followed by antiseptic incision and drainage, with the precautions which, I believe, Dr. Macleod (Shanghai) and I were the first to apply to the surgical treatment of liver abscess in January of 1878. Our first case (a successful one) is recorded in THE LANCET of June 22nd, 1878.

Medical Societies.

PATHOLOGICAL SOCIETY OF LONDON.

Enlargement of Median Nerve.—Fracture of Olecranon.—Diastasis of Lower end of Humerus.—Molluscum Contagiosum.—Obstruction of Mesenteric Vessels.

THE annual meeting of the Pathological Society of London was held on Tuesday last, Jan. 4th, J. Hutchinson, Esq., in the chair. The first hour was devoted to the usual business of the Society, and the closing half hour to the adoption of the annual report, election of officers for the ensuing year, and thanking the retiring officers. Dr. Horrocks and Mr. Barker acted as scrutineers of the ballot.

Dr. ORMEROD showed a woman, twenty-three years of age, with Enlargement of the Median Nerve. She was the subject of inherited syphilis, but had enjoyed good health till five years ago, when she suffered from an attack of pain in the left arm, worse at night, which passed off under simple treatment. Two and a half years later the pain recurred, and was felt shooting down into the fingers, and was gradually followed by paralysis and wasting. The median nerve is felt about the middle of the arm enlarged to the size of a big quill, firm, tender on pressure, which causes numbness in the thumb and outer fingers. There is wasting of the superficial flexor muscles of the forearm, and the ball of the thumb, with loss of normal response to the faradaic current; there is also anæsthesia in parts of the thumb and two adjacent fingers. When first seen the skin of these digits was glossy, thin, and slightly ulcerated, but is now healthy in appearance. In support of the view that this condition is syphilitic Dr. Ormerod referred to—(1) Absence of other cause, such as injury and cold; (2) the ulcers healed under the administration of iodide of potassium; he thought the swelling of the nerve was also less; (3) deafness due to affection of the inner ear or auditory nerve began or was aggravated in the year preceding the attack of pain.—The PRESIDENT believed the case to be unique; the fusiform enlargement of the nerve resembled that seen in leprosy, of which there was no trace here. Although he had never demonstrated neuritis in single nerves of the limbs in inherited syphilis, he had suspected it in some cases of numbness and great pain in the fingers; and similar affection of the optic and the cranial nerves was met with, so that he was disposed to think Dr. Ormerod's explanation correct.—Dr. ORMEROD stated that there was no optic neuritis or atrophy of the disc, only a little cloudiness of the media.

The PRESIDENT exhibited two living specimens. One was a man who fell back on to his elbow ten years ago, and fractured his olecranon transversely. He was treated with the arm in the flexed position, the fragment is fixed almost immovably to the back of the humerus, with a wide gap between it and the ulna, in which there appears to be not any uniting medium. The man has power in his triceps, and can partially extend the elbow; he also has partial paralysis of the ulnar nerve, with contraction of the ring and little fingers, numbness, and wasting of the muscles between the thumb and forefinger. On the other hand, he shows the signs of intra-uterine amputation of all the fingers. The second case was a little girl who had had separation of the lower epiphysis of the humerus, with displacement backwards, and anchylosis in that position. The Transactions of the Society contain a larger number of cases of diastasis than can be found elsewhere, and this induced him to show this case, which was the best marked he had ever seen.

Dr. THIN had examined a large number of sections prepared under his direction from upwards of fifteen Molluscum Contagiosum Tumours. With a single exception no hairs or sebaceous tumours were found in all these sections. It is evident, therefore, that the development of these tumours is attended by falling out of the hairs, and disappearance of the sebaceous glands. The molluscum formation has no duct, a breaking down of the central cells having been mistaken for a duct by some observers; and there is no sebaceous secretion in the cells. The tumour is composed of rounded epidermic masses, and not glandular elements. A molluscum tumour is formed by a small number of independent growths, beginning on the free surface of the epidermis, close to each other. These coalesce as they grow to form one tumour. In a favourable instance the primary point of origin was traced to a hair-follicle; and basing his opinion on appearances formed in one of the tumours, Dr. Thin, with Virchow, assigns the first abnormal action to the cells of the internal root-sheath. The hair drops out of the distended follicle, the sebaceous glands atrophy, and the follicle becomes enormously widened. New growths bulge out from the epidermic root-sheaths of the hair. The small group of independent points of development, whose coalescence goes to form the tumour, probably originated in inoculation by the discharge of molluscum cells from the follicle. As the morbid process can develop from the free surface of the epidermis, its origin in a follicle may prove to be not invariable. The development of the molluscum body from an epidermic cell takes place by the cell becoming first filled with granules, in the midst of which clear spaces (vacuoles) are seen. These granules enlarge, and finally coalesce into a homogeneous mass, the nucleus being pushed aside, and finally disintegrating and disappearing. In the full development an epidermic shell or wall contains a mass of homogeneous substance, which has special physical and chemical properties, and which is in reality a new product. It may fall out of the epidermic shell, and retain its shape and consistence. A molluscous body is an epidermic, and not a gland cell, whose natural evolution has been modified by the interference of an unknown cause. Everything tends to show that this cause comes from without, lodges first in the follicle, and there develops and multiplies, and infects the immediate neighbourhood of the follicle. The imperfectly-formed fibrous tissue that surrounds the tumour testifies to a certain amount of reaction set up by a substance which is foreign to the healthy tissues.

Dr. RADCLIFFE CROCKER showed specimens of Molluscum Contagiosum in a very early stage. The earliest showed the molluscous bodies in the rete mucosum, occupying the upper layers of the inter-papillary processes, together with those cells of the corneous layer which stained with carmine, while the external cells which took the picric acid stain were free from these molluscous cells. This change could also be traced in a minor degree into the deeper cells of the rete, as far as the palisade cells. In these specimens no alteration in the position of the palisade cells had yet occurred. In a tumour fully formed, but very small, a section through the centre of the tumour showed the wall of the duct-like orifice continuous with the epidermic layers of the skin, and within a plug of yellow cells, which did not stain with logwood or carmine, and which were in an advanced stage of the molluscous change. The evacuation of such a plug would give rise to the appearance of an open hair-follicle as commonly seen. Near this tumour transverse and vertical sections of hair-follicles could be seen with the molluscous change in the cells nearest the hair-shaft—i.e., in the internal root-sheath—so that the process evidently began in hair-follicles in some instances, though it seemed probable that it might also begin in the upper layers of the rete independently of the hairs. These observations were in accordance with the view that Virchow, followed by other Continental authorities, had put forward, and which Dr. Alfred Sangster had demonstrated two years ago in this country.—Dr. MORRISON had examined some specimens and was of opinion that the change began in the rete mucosum around the sebaceous gland, with great increase of the periplast; the gland itself is enlarged and softened in the centre; there was close similarity between these changes and those in the tissue of a wart from the scalp he had recently examined. He had failed to demonstrate the growth in connexion with a hair-follicle.

Dr. TAYLOR exhibited a specimen removed from a child aged five years, who was suddenly seized with vomiting and severe pain in the belly one afternoon; collapse ensued and the child died next morning. Dr. Taylor made the autopsy sixty hours after death. The peritoneal cavity contained about ten ounces of blood; the upper eight inches of the

jejunum were turned up to the right and passed under a soft filamentous band reaching from the hepatic flexure of the colon to the mesentery; it was unaltered in appearance. All the small intestine below this was in its proper situation, but intensely congested and of a purple colour, which was obviously not due to constriction. The superior mesenteric artery was healthy for about an inch of its course, and was then completely obliterated for three-quarters of an inch by a firm semi-cartilaginous and fibrous mass; the branches coming off below this plug were not examined. At the same spot the mesenteric vein was filled with a soft thrombus. The congested intestine contained a few ounces of blood; the mesentery was thickened, as if from chronic inflammation, and the mesenteric glands were enlarged, but not caseous; other viscera healthy. During life the symptoms were attributed to eating strawberries. Dr. Fagge had recorded in the Transactions the case of an adult seized with severe abdominal pain who died in twelve hours; a thrombus was found in the superior mesenteric vein, and the small intestine had all the appearance of strangulation. In this case the obstruction of the artery was evidently not recent, and the question arose whether it had been suddenly completed by some twist of the gut, or whether the effects were produced entirely by the venous thrombosis.—Dr. D. POWELL asked what was the nature of the growth in which the vessels were imbedded.—Dr. TAYLOR had not examined it microscopically, but considered it to be merely the result of chronic inflammation of the mesentery.

The following card specimens were shown:—1. Calcareous Aorta, by Dr. R. W. Burnet. 2. Mucous Tumour of the Heart, possibly syphilitic, by Mr. Shattock. 3. Epulis, containing masses of hyaline cartilage, by the President for Dr. Lediard. 4. Diseased Kidneys from a young boar, by the President. 5. Specimens showing Gouty and Chronic Rheumatoid Arthritic Changes in the same individual, by the President.

The special business of the annual meeting was then despatched, and the meeting adjourned.

ASSOCIATION OF SURGEONS PRACTISING DENTAL SURGERY.

On Maxillary Abscess and Necrosis in Childhood.

AT the meeting of this Society, on Dec. 15th, 1880, W. A. N. Cattlin, Esq., F.R.C.S., President, in the chair—

Mr. EDMUND OWEN read a paper on Maxillary Abscess and Necrosis in Childhood, and stated that the question he desired to suggest for discussion was this: Is it right to refuse to extract a carious and aching tooth on account of the acuteness of the periosteal and maxillary inflammation which its presence has excited? Mr. Owen felt that the knowledge of general surgeons on this point was by no means definite, involving, as it does, pathological and surgical principles of great importance, and he was anxious to get an opinion from those present, since he held that no surgeon should ever refuse to remove a tooth which is the cause of acute inflammation for the simple reason that the local disturbance is excessive. He would narrate three cases by way of analogy.—Case 1, that of a little boy in a most miserable condition, with a large bright red or dusky swelling at the end of his thumb. He can neither eat nor sleep, on account of the inflammation of the bed of the nail. The nail is evidently doomed, discoloured, and loose, and imbedded in a bleeding groove of vascular granulations. The nail is removed, water-dressings applied, cod-liver oil and iron prescribed, and the boy from that time recovers health and strength. *No* treatment which did not include the removal of the nail would have been of avail.—Case 2 is that of a child with acute periostitis and inflammation of the bone itself, with probably some periosteal suppuration, caused by exposure to cold and wet. A bold and free incision is made, which at once relieves the vascular tension, and the little patient recovers.—Case 3, that of a boy with the lower part of his face bound up, and his external ear plugged with cotton-wool. On removing the comforter, and with it a decomposing mass of moist linseed-meal, one finds the cheek red and swollen. He can only slightly separate the jaws, and one notices that one of the molars is slightly decayed. On pressure a small quantity of pus wells up between the tooth and gum, and near the angle of the jaw is a small opening, from which matter is discharging. The boy had been previously taken to a dentist, who refused to extract the tooth "until the inflammation had gone down," and advised the mother to keep on poulticing the cheek. Mr. Owen then drew attention to the course that the inflammation followed in the last case, the local disturbance having caused paralysis of the vaso-motor nerves, the Haversian arteries became crowded, and blocked with the red corpuscles. The colourless corpuscles effect their escape, together with some of the liquor sanguinis, and the protoplasmic contents of the lacunæ and canaliculi take on energetic proliferation. The bone becoming flooded with sanguineous effusion, and healthy nutrition being impossible, a portion of the jaw perishes, and frees itself by linear ulceration, and remains as a sequestrum. In operating, the less the wounding of the skin and the less the disturbance of the young teeth the better. In his experience necrosis of the superior maxilla was rare, whilst that of the inferior was not uncommon. In the case of the boy with the acutely inflamed tibia, we find that the result of those firm incisions has afforded complete relief to the vascular and nervous tension, and also a vent to the effused products, thus saving the compact bony tissue from a fatal flooding. And these same conditions are obtained in the case of the child with the maxillary distress, and prompt extraction would doubtless have spared the sufferer much subsequent trouble. In conclusion, Mr. Owen would venture to affirm that whenever a child is brought for assistance the more firmly fixed the jaws, and the greater the inflammation, the more imperative it is that the irritating cause and the vascular tension of the adjacent bone be simultaneously removed. The tissues will then settle down in quiet, as happily as did that red and swollen finger-tip when the removal of the piece of damaged nail was effected.—The PRESIDENT remarked that it was the practice of some to wait until inflammation had subsided, and he was a strong advocate for an early removal of the offending cause, as delay often greatly increased human suffering, and was, in many instances, injurious to the patient in after-life.—Mr. CATTLIN then narrated a case in which all the apparent symptoms of blood-poisoning were present. The water and drainage of the patient's house were good, and he had never been to sea. The breath was fetid, and the gums presented a warty appearance. The upper and lower extremities were studded with patches like ecchymosis, but no symptoms of purpura were seen in the mucous membrane of the mouth and elsewhere. The treatment consisted in a generous diet, with full doses of chlorate of potash and decoction of bark, which was afterwards changed for mineral acids and sulphate of iron and quinine. Under this treatment the patient slowly recovered, and in all probability the case was one of scurvy, brought on by other than the usual causes.

WEST KENT MEDICO-CHIRURGICAL SOCIETY.

THE second meeting of the present session was held at the Royal Kent Dispensary, Greenwich, on November 5th, 1880, Mr. H. W. Jackson in the chair, when W. Rivington, Esq., F.R.C.S.E., Surgeon to the London Hospital, read a paper on "A Wound in the Knee-joint treated Antiseptically." Mr. Rivington first gave a detailed account of the case and treatment, which went to show that it was a severe wound of the joint making a perfect recovery under the Listerian treatment. Mr. Rivington then said that it was unlikely the case would have gone on so well under the old treatment, and compared the issue of cases treated in former years under the old system and cases now treated under the protection of carbolic acid and carbolic gauze. Admitting that excellent results were obtained in the perfectly pure atmosphere of the country with a modified antiseptic procedure, and even without antiseptic precautions, Mr. Rivington said that the comparison must only be between cases which were treated in the loaded atmosphere of great cities and hospitals.

THE members of the staff of the Earlswood Asylum last week presented Dr. J. B. Spence with a gold watch on the occasion of his departure for his new post of medical superintendent of the South Stafford Asylum. The four night-nurses also presented Dr. Spence with a handsome biscuit-box.

Reviews and Notices of Books.

A Treatise on the Practice of Medicine. For the Use of Students and Practitioners. By ROBERTS BARTHOLOW, M.A., M.D., LL.D. London: H. K. Lewis. 1880.

A Text-book of Practical Medicine, with particular reference to Physiology and Pathological Anatomy. By Dr. FELIX VON NIEMEYER. Translated from the Eighth German Edition by GEO. H. HUMPHREYS, M.D., and CHAS. E. HACKLEY, M.D. Revised Edition. Two Volumes. London: H. K. Lewis. 1880.

A Treatise on the Theory and Practice of Medicine. By JOHN SYER BRISTOWE, M.D. Third Edition. London: Smith and Elder. 1880.

The Science and Practice of Medicine. By WILLIAM AITKEN, M.D., F.R.S. Seven Edition. Two Volumes. London: C. Griffin and Co. 1880.

TOWARDS the end of the year that has just passed there appeared almost simultaneously the four text-books on medicine which are named above. Three of them are already well-established favourites, and have run through several editions, but one is a new addition to the already rather numerous works from which the student has to make a choice; on this account we may give it the first place in this notice.

Its author is already well and favourably known in medical literature by his "Text-book of Materia Medica and Therapeutics." He indicates that his endeavour and aim have been to redeem medicine from the therapeutic nihilism that seems to be stealing over it; but, after all, the perusal of his pages does not lead us much farther in the direction of treatment than either of the other works we have named. Still there are many points of merit in Dr. Bartholow's book. It is concise, but is thoroughly up to date, and his references to recent pathological and therapeutical work are numerous. As an indication of the care with which he has followed the progress of events may be cited those passages on the treatment of acute rheumatism where he gives the conclusions arrived at by Dr. Greenhow in his recent papers upon the value of the salicylates. On another subject—namely, gastric ulcer—he advocates rectal alimentation by defibrinated blood—a method upon the good effects of which the Therapeutical Society of New York reported about a year ago, and which has been lately discussed at one of our London societies by Dr. Sansom. We may note here his recommendation of irrigation of the stomach in this disease, for diluting the gastric fluids and aiding the healing of an ulcer. Although he is careful to add that this should only be cautiously employed, it would, in our opinion, have been almost better not to have advised it at all, considering the obvious risks run by the procedure. For choleraic diarrhœa he alludes to the striking effects produced by the hypodermic injections of morphia and atropia. Considerable prominence is given to duodenal catarrh, an affection which, apart from its frequent concomitant, catarrh of the bile duct, is less easy to be differentiated from gastric catarrh than the author would have us believe. In speaking of the changes set up in the liver by occlusion of the bile-ducts, he mentions the researches of Charcot and Fagge—the latter name should have been Legg, to whom, indeed, belongs the credit of first drawing attention to these dangers, since termed by Hanot hypertrophic cirrhosis, and in another section he correctly mentions Dr. Legg's name in this connexion. There are good accounts of membranous arteritis and of dysentery, the former largely culled from Da Costa's memoir. In the chapter on intussusception we note an error, which, however, is very frequent—namely, that the most common of all forms of intussusception is that of the ileum through the ileo-cæcal valve. On the contrary, this is almost the least common, the ordinary variety being of the cæcum into the colon, the invagination commencing at the valve, and the cæcum, as it passes down, dragging the ileum after it. We are glad to find Dr. Bartholow gives the term "cirrhosis" the cold shoulder; but although, as he says, it is a "very inappropriate designation," it is, we fear, too firmly rooted in medical nomenclature to be ever set aside. Upon abscess of the liver he holds the dualistic doctrine of origin—viz., from portal pyæmia set up by dysenteric ulceration, and from a primary hepatitis. The treatment of hydatids of the liver is too brief, mention only being made of simple puncture and electrolysis, and no reference to the frequent supervention of suppuration and the indications for the free and complete evacuation of the cysts when so inflamed. The chapters on cardiac disease are fairly well up to date, and in the section on aneurism Sibson's statistics are quoted. Upon the treatment of aneurism, Tufnell's plan is advocated, especially when aided by iodide of potassium. Langenbeck's employment of ergotin, and Boehm's advocacy of barium on physiological grounds, are noticed; and it is pointed out that electrolysis has not been so successful as some of the above methods. The remarks upon the treatment of pleurisy open with these words: "The author wishes to protest against that revival in the belief of the aplastic power of mercury, and the return to its use in the treatment of serous inflammation, which is taking place in Germany." He himself advises the administration of quinine and morphia at the onset, with digitalis if there be much fever; local bloodletting in plethoric subjects, and strong counter-irritation. He recommends jaborandi, or the hypodermic injection of pilocarpin, and, so far as can be gathered, is rather an advocate of delay in paracentesis, unless the effusion be purulent. Phthisis is treated of under the three divisions—caseous, tubercular, and fibroid—a separate section being devoted to cartarrhal pneumonia. Croupous laryngitis is dealt with apart from diphtheria, and the local measures advised are chiefly in the way of solvents of the membrane, the need for tracheotomy not being referred to under the former head, and mentioned only to be mildly discountenanced (because there appears to be a "growing disinclination" for it) under the latter. In the other text-books before us a far more just and favourable view of the value of this important operation is taken. Space will not permit of further analysis of this latest text-book on medicine, which has many good features, not the least of which is the lack of pretentiousness about it, and the general accuracy of its statements; but it is capable of improvement, and its author will doubtless have opportunities for its revision as further editions are called for.

"Niemeyer's Medicine" hardly needs any special notice. The appearance of the translated edition some years ago was so well received, the book itself being so thoroughly scientific, that it at once became a favourite with English students. The present edition contains much, however, that its gifted author never wrote. There is hardly a chapter to which new matter has not been added by the editors, either in the form of short appendices at the close of the chapters, or incorporated in the text. A few subjects have been introduced not touched on by Niemeyer at all, and although this has been quite unavoidable in view of the increasing knowledge of the past decade, yet it is with mixed feelings that we observe this intermingling of matter from different pens with the original work of the author. It is some compensation, however, to find that the editors have refrained from presenting us with a transcript of the Seitz edition, where so much new matter was introduced that the original writing of Niemeyer had to be either condensed or mutilated. They have, on the contrary, restored much of the original text, and as far as possible kept it apart from the additions. Whilst confessing a preference for the original work, it would be wrong for us to maintain that

as a text-book of medicine this work does not still rank highest.

Dr. Bristowe deserves great credit for the painstaking manner in which he sets to work to improve his treatise. Although it has run through two editions in four years, he has yet been able to give so careful and extensive a revision to the third edition that it is as much better than the second as this was than the first. The chief feature of the present edition is the introduction of an article on insanity, extending over nearly fifty pages. It is right and proper that this subject should be treated of in works of general medicine. The subject is one which, though of vast importance, is almost entirely neglected by the ordinary student. The excuse that it concerns him not, for his text-books are silent on the subject, can no longer hold; and if, taking Dr. Bristowe's summary as a guide, he seeks practical acquaintance with mental disease by studying its phases in an asylum, he will qualify himself for practice in a far more thorough manner than is the fashion. Now that attention is being once more called to the medical curriculum, it would be well for those who seek to restrict rather than expand its limits to consider the very great and obvious need there is for compulsory education in mental disease. Another feature of this edition is the introduction of many additional woodcuts, and, although these might be almost indefinitely extended, the number already given add greatly to the utility of the work, which, as it stands, is thoroughly representative of modern medicine. If the next edition could be brought out, even more profusely illustrated, especially with pathological drawings, and if at the same time the work could be conveniently divided into two volumes, it would leave nothing to be desired.

But if Dr. Bristowe's work might well be distributed over two volumes, what should be said of the ponderous tomes of which Dr. Aitken's older and well-established treatise now consists? It contains matter sufficient to fill four volumes, and these of considerable size. The author has certainly aimed at making his book encyclopædic. Whether it has become more readable by the process is matter for doubt; but its value as a standard work of reference has been *pro tanto* enhanced. A great part of the book has been rewritten, especially that which required most rewriting—viz., the nervous system; and here free use is made of the writings of Jackson, Gowers, Charcot, and others. Dr. Aitken is most careful and candid in giving authorities for all his statements—the text fairly bristles with their names. There is so much that is excellent in these volumes that it is with regret we feel compelled to admit that the work is less suitable for the student than any of the others we have above noticed. To the physician, however, Dr. Aitken's work is most valuable; and it is a book which should be on the shelves of every medical library. Besides, it contains much information not usually met with in works of this class.

Health Lectures. Delivered in Manchester, 1878-79-80. Printed by the authority of the Manchester and Salford Sanitary Association. Manchester and London: John Heywood. 1880.

THE Association under whose auspices were delivered the lectures collected in this little volume has for its objects—1. "To promote attention to personal and domestic cleanliness, and to the laws of health generally. 2. To aid the constituted authorities in the promotion of sanitary improvements." The first of these objects is worthily fulfilled by these lectures, which are all written in plain and simple language, and enforce the vital truths of hygiene. Reproduced in a cheap form (each separate lecture can be obtained for one penny), they should have a wide circulation among the classes most in need of such instruction. The subjects are well-chosen—water, drainage, alcohol, food, ventilation, nursing—these and other topics are dealt with in a practical manner, and mostly with arguments appropriate to the audiences before which they were delivered; and when it is added that the lecturers include Drs. Dreschfeld, Ransome, Simpson, Holgate Owen, Irwin, Humphreys, Tatham, Ashby, and Sutton, it will be seen that the medical profession of Manchester have taken a great part in this good work of preaching the gospel of health.

NOTE ON THE DIAGNOSIS OF CAVITY IN THE LUNG.

To the Editor of THE LANCET.

SIR,—Would you permit me to refer briefly to the physical sign alluded to in your issue of Dec. 18th by Mr. Solomon Charles Smith of Halifax, under the title of "Note on the Diagnosis of Cavity in the Lung." Mr. Smith describes a sign which he has found present in cases of lung cavity—viz., a blowing sound audible in the trachea synchronous with the first sound of the heart. This tracheal bruit—which is evidently an expiratory sound—was described and demonstrated by me as occurring in cases of thoracic aneurism, before the Northumberland and Durham Medical Society early in October, and was noticed by some of the medical journals—viz., *Medical Press and Circular*, Oct. 27th, p. 359, and the *Dublin Journal of Medical Science*, November, p. 464.

Since first observing this sign, now about eight months ago, I have carefully looked out for it, and have only found it to be well marked in cases of aneurism of the thoracic aorta. I first discovered it in healthy individuals after violent exercise, and subsequently noted its existence in aneurism when the patient lay quietly in the recumbent position. It is best developed by making the patient inspire deeply, and then closing the mouth to expire slowly through the nasal passages.

In aneurism—for I do not deny its existence in lung cavity, though I have not found it myself—I think it is to be explained by the sudden systolic expansion of the sac pressing upon the lung or air-tubes, and expelling air from the chest cavity, thus causing a puffing sound synchronous with the systole, and audible in the larger tubes and trachea.

In healthy people the sound is produced by the sudden "over-distended" arch pressing in a similar way as the result of exercise.

I think Mr. Smith's explanation of the sign, even supposing it to exist in cases of pulmonary cavity, is scarcely tenable. He says, "obviously produced by the impact of the contracting ventricle against a neighbouring cavity." For surely the impact is directed forwards and away from the site of lung cavities; and, again, systolic contraction of the ventricle means a diminution in the size (bulk) of the heart, thus inducing occasionally, as is well known, a short inspiratory puff, the result of the rushing in of air to the parts of the lung adjacent to the heart.

I remain, Sir, your obedient servant,
DAVID DRUMMOND, M.A., M.D.,
Physician to the Newcastle-on-Tyne Infirmary,
Lecturer on Physiology, Durham University.
Newcastle-on-Tyne, Dec. 21st, 1880.

COLLEGIATE PRIZES.—It is stated that only two essays have been sent in for the Jacksonian Prize of the Royal College of Surgeons on "The History, Principles, Practice, and Results of Antiseptic Surgery;" the time for sending in essays having expired on the 31st ult. For the present year the subject for this prize is, "The Pathology and Surgical Treatment of Diseases of the Hip-joint." The subject for the Collegial-triennial prize, to be awarded in 1883, is "The Relations between the Radicles of the Lymphatic System and Capillary Vessels." The prize consists of the John Hunter Medal, executed in gold to the value of fifty guineas, or at the option of the successful author of the Dissertation of the said medal executed in bronze, with an harmonium of £50. The competitions for both are confined to members of the College.

THE LANCET.

LONDON: SATURDAY, JANUARY 8, 1881.

THE defects of medical education and examination become more conspicuous every year. There is now no disagreement as to the fact. Judged by every standard the existing systems of medical education are faulty. Compulsory examinations have had a long, and, upon the whole, fair trial, but they have failed to react, as it was thought they would, in a wholesome manner upon education. From the educationist's standpoint the principal outcome of compulsory examinations is "cram." Training and culture have not only not become better, but they have deteriorated. A point has been now reached from which many sagacious men profess to see disappointment and ultimate disaster if precisely the same lines are followed as heretofore. How to avert these? and how to attain success? these are the questions.

It is always easier to detect an evil than to find an appropriate remedy. The letters which have appeared and are appearing in our columns testify to the difficulties that beset the path of the reformer. Various suggestions have been made for the improvement of medical education—namely, a stricter preliminary examination, the institution of a compulsory preliminary scientific examination, the revival of the system of apprenticeship, elimination of some subjects from the medical curriculum and limitation of others, and, finally, an extension of the time devoted to medical studies. It is curious to find that almost every writer has been content to propose a single specific. Mr. SAVORY, for instance, advocates an extension of the medical curriculum to seven years, while Mr. HEATH proposes a sort of modified extension of time by requiring that two clear years should elapse between passing the primary and presentation at the final professional examinations. Mr. BUTLIN would eliminate some of the subjects at present included in the list of professional studies and would limit others, while Mr. BRUCE CLARKE would be satisfied to see the standard of preliminary education raised. Dr. STRANGE deals more thoroughly with the matter, and recommends not only an extension of time given to professional study, but a revival of the system of apprenticeship, and elimination from the strictly medical curriculum of chemistry, botany, materia medica, as well as physics and zoology; all of which should be mastered before the purely medical studies are begun. Dr. STRANGE would further make the curriculum to extend over five years, two of which should be spent in pupilage at a hospital or dispensary, or with a general practitioner in large practice.

There is too much reason to fear that no single remedy will correct all the faults of medical education. The regulations and requirements need to be entirely reconsidered. One thing is certain; any change must necessarily increase the cost of the medical education both as regards time and money. It is, perhaps, not of much importance at what period the greater portion of the increased cost is borne, whether during school-life or later on during the medical curriculum. That an improvement in the general education of the bulk of medical students is desirable, few who have had any experience as teachers will deny. While the standard of general education throughout the community has been raised during the past fifteen years, few of the bodies who conduct the preliminary examinations for the medical profession have made their scrutiny more strict. Indeed, in some instances the test has been actually lowered. The time has now come when a better general education should be insisted on. It may be true that some good practitioners of the present day as well as of the past may not have been men of much general education but they have succeeded, not because they lacked culture, but in spite of this drawback. A good general education may be to some extent a matter of accident or opportunity, but it is at the same time, in no small degree, a criterion of good social and intellectual antecedents. By enlarging the requirements as regards general education much may be done to raise the status and influence of medical men by attracting a better class of candidates into the ranks of the profession. On the other hand, as we endeavoured to show in a recent address to students, the preliminary education should be as far as possible *general*; after this, and before the strictly medical studies are begun, some time, a year or more, might advantageously be given to the study of the natural sciences, as physics, chemistry, botany, zoology, as a sort of introduction to the *technical* part of the student's training. This is already done at the universities. By these means the medical curriculum would be lightened, and more time could then be given to anatomy, physiology, midwifery, medicine, and surgery. This would really be tantamount to extending the time devoted to medical studies. Another suggestion for improving medical education is that of reviving the system of apprenticeship. In the address referred to (see THE LANCET, Sept. 11th, 1880, Students' Number) we called attention to some of the advantages of a short period of pupilage. But granting its advantage, it would be a question whether the term of pupilage should wholly precede study at a medical school, or should wholly follow, or be divided, a portion preceding, and a portion following, the sojourn at a medical school. For the complete education of a medical practitioner there are certain advantages in the latter course. A few months passed, at the beginning of his career, under the supervision of a well-informed practitioner either in general practice or in a small hospital or dispensary, would prepare the student for studies at a medical school. In a very short time some acquaintance with anatomy and materia medica might be formed and a respectable skill acquired in minor surgery and pharmacy. There would then be less risk than at present of the three or four years passed at a medical school being wasted. But those who advocate a return to some form of apprenticeship, do so chiefly on the ground that in no other way can the "mystery" of practice be acquired. The majority of those who now obtain qualifications are ignorant of the nature of general practice. Something might be done to remedy this, by requiring that all who wish to engage in practice should, after passing their examinations, spend six months or a year with a qualified practitioner. Such a

regulation was in vogue in the kingdom of Naples six hundred and fifty years ago. Students were then compelled to apply themselves to the study of logic for three years before they commenced the study of medicine, which was itself to be pursued for five years. After this the candidate had to undergo two examinations for his licence and doctorate before the masters of the school of Salerno, and then to spend a year upon trial under an expert physician before he was allowed to practise on his own account.

THE transmission of diseases supposed to be peculiar to one class of animals, by means of inoculation, to animals of another class, is a matter not alone of theoretical interest, for it has been the means of extending largely the sphere of observation on the pathology of a most important class of maladies. Much interest, therefore, attaches to any attempt to ascertain whether such diseases, hitherto supposed to be limited in their incidence, are or are not so limited by constitutional peculiarities. An important series of researches on this point have been undertaken by M. COLIN of Alfort, who has endeavoured to learn whether glanders can, as was asserted long ago by DUPUY, be transmitted from the solipeds to the rodents, and, in doing so, has brought out prominently some important pathological facts relative to the disease. In some experiments made with this object twelve years ago, M. COLIN discovered that the inoculation of the rabbit with the poison of glanders gives one of four results. Death may occur rapidly without visceral lesions; there may be extensive and deep ulceration at the places at which the inoculation was made; it may cause more or less pronounced tuberculisation in the lungs; no appreciable effects of any kind may follow. In some recent experiments upon this subject, M. COLIN has endeavoured to solve the following problem:—If there are two elements in the products of glanders, the one a virus capable of transmitting the specific disease, the other tending to cause tuberculisation, it is necessary to submit the various morbid products to comparative experiment, because these two elements may be found separate, or capable of dissociation. In many experiments the results have seemed to harmonise with this theory of separable poisons, although in previous observations their dissociation has not been obtained. M. RENAULT, who succeeded in transmitting glanders to the sheep, goat, and dog, found the complete disease was generated; in each species of animal there were both nasal ulcerations and pulmonary tubercles. In each the disease was fatal, and demonstrably virulent, since from each it could be retransmitted to horses in its perfect form. But it had already been noted that in man this was not always the case. In rare cases human glanders presents all its characters and virulence, but more frequently only local lesions are produced, unhealthy wounds, abscesses, ulcerations, fistulæ, &c., without appreciable complications in the lungs, and with no appearance of a contagious character. It is rarely that surgeons acquire glanders from the inoculations to which they are exposed in operations on infected subjects, and in post-mortem examinations on those dead of the disease.

The receptivity of the rabbit for the poison of glanders is considerably less than that of man, and M. COLIN has found that in the rabbit the evolution of the disease seems to become arrested at different periods, causing lesions which vary very much in different cases, and which seem to indicate both the complexity and the separability of the elements of virulence. After the insertion of the virus in the substance of the skin or in the subcutaneous cellular tissue, a conical prominence often presents itself at the seat of the inoculation in the course of twenty-four hours, often surrounded by a zone of erythema, beneath which is a phlegmonous œdema. After the appearance of this prominence pyrexia sets in, and the temperature may rise to 106° F. This state of affairs lasts for four or five days without other alteration than the extension of the redness, and sometimes an enlargement of the nearest lymphatic gland. If death does not occur without further symptoms, the local state undergoes a modification: the swelling lessens, the redness and heat subside, a small adherent crust covers the apex of the prominence, and there is no noticeable process of ulceration or suppuration. At the end of the second week these local changes may have disappeared without other trouble. More frequently, however, the local swelling persists, its base becomes indurated, and an ulcer forms, more or less deep, with irregular borders. This second phase of the local accidents may last two, three, or four weeks, and then gradually lessen, and cicatrisation may take place. From this time the animal either recovers its usual state of nutrition or remains languid, becomes tubercular, and ends by dying with serious lesions in the lungs, kidneys, and other viscera, and even with morbid changes in the muscles and articulations.

It is thus evident that in the rabbit the disease advances by stages, at the end of each of which death or recovery may take place. Even in the most severe cases, the whole series of symptoms observed in the horse are not reproduced. In this respect the course of the disease bears considerable resemblance to the features which it presents in man. It is, therefore, of interest to inquire why these remarkable variations in its course occur. In some cases in which death occurred with great rapidity, M. COLIN attributed it to septicæmia, although only a small quantity of fresh blood had been taken from a horse immediately after it had been slaughtered. Death occurred, however, in just the same way when a drop of liquid was taken from a living animal upon the point of the lancet, and the absence of septicæmia was proved by the fact that the rabbit's blood, taken immediately after death, had no effect when inoculated into another rabbit. When the animal dies only at the end of five or six months, the cause of death is always pulmonary tuberculisation, which is slighter in degree than that which occurs in consequence of tubercular inoculations. Tubercles and caseous foci are scattered through the lungs; the pleuræ and the kidneys show also a considerable number, and some are found in Peyer's patches, and in the mucous membrane of the small intestine. Moreover, many articulations may be invaded by caseous or tubercular disease, especially the scapulo-humeral, the femoro-tibial, and the tibio-tarsal.

Thus, the disease is represented by pulmonary lesions, as in the horse, and by articular lesions, as in man. But the ulcerations of the nose, larynx, trachea, and the lesions of the skin are absent. The disease is incomplete, killing under the form of a tubercular disease. Differences from the effect of the inoculation of tubercle, however, are that in glanders the lymphatic glands swell much less than they

do after the inoculation of tubercular material; they become slightly indurated, and undergo caseation either not at all, or only in minute spots after a long period. On the other hand, after the inoculation of tubercle, the glands often attain enormous dimensions. After the inoculation of glanders, the tuberculisation of the lung is slow, and apparently, to judge by the general condition of the patient, may be arrested or suspended, and it is often insignificant; there is never the pronounced phthisical condition which follows the inoculation of tubercle. In a large number of cases the rabbit inoculated with glanders recovers its health after the local troubles, and the disease presents in general the remarkable peculiarity that it appears to be virulent and may kill at an early period, and loses its virulence later, even after having caused a certain amount of pulmonary tuberculisation. M. COLIN took from a rabbit, dead on the sixth day after inoculation with glanders, some serum from the œdema adjacent to the local tumour, and also some pulp from a neighbouring lymphatic gland. These two products were separately inserted into the skin of another rabbit, one into the right flank, the other into the left. At the end of seven hours the skin of the flanks began to redden, and the next day the redness had invaded the whole lumbar region, and there was already fever and loss of appetite. The symptoms increased, and at the end of ten days ulceration commenced. At the end of a month the ulcers were dry, and the animal's general state began to improve. After three months and a half it was killed. All internal glands and organs were healthy, and thus this, so to speak, second generation of glanders had become arrested in mid-development. When the disease has arrived at the stage of pulmonary tuberculisation it is no longer inoculable, either by means of the blood, the serosity, or the tissue of the glands. But tubercle at this stage is just as inoculable as in any other. Hence M. COLIN draws the conclusions—(1) That glanders is not a simple disease which always runs its course, but is constituted by a series of elements which succeed one another, and the links between which may at any point be broken. (2) That virulence is not necessarily and constantly combined with the disease. It exists at the commencement, and may be lost later, even although the disease progresses and tends to become fatal. It is probable that there are many diseases of similar constitution, of common origin and identical nature, which by the different aspect they present in one animal or another, appear to be different affections, the origin of which is not evident. Hence, when an attempt is made to establish the identity of a disease by means of experiment, an animal must not be selected in which the disease does not run a complete course. If, for instance, it is desired to test by inoculation whether a given disease in man or the horse is or is not glanders, the rabbit should not be chosen, since the indications which it gives are not decisive.

THE needs of society increase as the square of its density. In primitive times, when the population was sparse and the habitations of men were few and far between, it was possible, when persecuted by sickness in one locality, to flee to another; and although, even in the early days of world-history, disease was doubtless disseminated by this policy of migration, the harm was less than would have accrued to that of remaining stationary and running the risk of self-infection. Isolation of the sick was one of the first, because it has ever been the most obvious, of measures for the arrest of contagious or infectious—or let us mask our ignorance, and say "catching"—maladies. The *leper*—who was probably a typical sick-man rather than a person suffering from any particular disease—soon came to be shut out from intercourse with his fellows until he was cured. And then—that is when he *had* recovered—he was required to remain apart until he had undergone some special processes of disinfection applicable both to his person and his clothes, which, like the isolation to which he had been subjected during his illness, were designed as much for the protection of the community as his own benefit. The scientific researches of the last half-century have resulted in the acquisition of a vast amount of knowledge in relation to the genesis and the exodus of disease, and thrown a flood of practical light on the need and efficacy of these precautions.

It cannot be denied that society has—doubtless moved by its fears—evinced considerable alacrity in learning the lesson of "going without the camp" and "standing apart," as sanitary expedients, but this would seem to be all it has learnt; and, even now, with all our nineteenth-century sagacity, we are only just beginning to grasp the notion that mere "quarantine," however rigorously enforced, will not do everything, or even the half, of what is requisite. Segregation is only a remedy for the evils incident to aggregation in so far as it gives time and opportunity for the dying out of the *materies morbi*, which happens to be particularly short-lived if not quickly supplied with a new *nidus*. The robust germ—or sperm, whichever it be—is not killed, it is not even scotched, by being cast off or deposited or allowed to fall into what seems to be a process of atrophy *in situ*. Its animation may be suspended, but vitality remains, and like the desiccated lymph on the vaccine point, or, possibly, the dormant virus of rabies lying fallow in the system of the man who has been bitten by a mad dog, it only sleeps, and may at any moment be infused with new energy. Society, if not the State, is, we say, beginning to recognise these facts, and may, perhaps, before long, be willing to act upon them.

Meanwhile there is an especially self-evident consideration which would scarcely seem to have dawned on the popular intelligence—namely, that very little can be gained by the isolation of fever patients in hospitals and outbuildings, if at the commencement of convalescence they are to be brought straight back into the midst of society, without undergoing a process analogous to that of the purification ordained for the leper. It matters nothing to the general cause of public health whether the patient recovering from a communicable disease is removed to his own home, or placed for a while among strangers. It is a purely selfish policy which prefers to send the convalescent to the seaside, or into some rural village for a few weeks, before he is allowed to re-enter his family. The real danger of infection is not lessened by this device; but the instinct of self-preservation has hit on the sagacious expedient of shifting the peril from self to others. This is where and how well-conceived, but imperfectly

executed, measures for the "stamping-out" of disease break down. Human nature is selfish, and if by a simple process of isolation disease can be kept out of a particular household or family circle, its promoters are abundantly satisfied. They care nothing who else may "catch" the disease, so that they escape. Until broader and less selfish views are popularised, there can be no such thing as disease extermination.

The policy of special and limited isolation, or "quarantine," receives its *reductio ad absurdum*—as a pretentiously rational artifice for allowing disease to die out if its germs happen to be peculiarly mortal—when a patient suffering from one of the exanthematous or intestinal fevers is kept apart so long as the pyrexia lasts and the *malaise* continues, and then turned adrift on the community at the particular period when the *materies morbi* is passing off by the desquamation of cuticle, the shedding of epithelium, or the unloading of follicles and open glands. In some maladies—scarlet fever, for example—the period of exfoliation is the time of special danger. It is one of the marvels of modern thought that we do not, will not, work out the logical consequence of the general policy to which we commit ourselves. We seize on an idea suddenly and clumsily, often making believe to "discover" what has been staring us in the face for ages, and impulsively put it in practice; but if any one ventures to suggest that some secondary but necessary notion lying a hand's breadth beyond the range of eager vision is part and parcel of the original idea, he is sure to be looked upon as a pessimist or shunned as a dreamer.

We venture to hope this may not be the fate of those who are now striving to convince the public that "homes" for the reception of patients recovering from scarlet fever, but still in peril themselves and a source of danger to others, are absolutely needed. There can be no doubt of the entire accuracy of the representations which are being made. Indeed they understate the urgency of the requirement. It is not merely that society is now exposed to grave risks from special cases. The periodic "visitations" of this and kindred maladies which invade the community and cut off valued and sometimes useful lives are in great part due to the shortsighted practice of sending patients to the seaside and out-of-the-way places during convalescence. When one individual "catches" a communicable disease in a locality which appears to be free, or almost free, from the malady, this is because some other individual has at a former period left the poison or seed of disease where it is now found. It is difficult, generally impossible, to trace the connexion between the two links in the chain; but they are practically and substantially related, as would be the person who left a tube charged with vaccine lymph in a drawer, and some other person who, months afterwards, rummaging in the same drawer, found, and, accidentally breaking the tube, wounded and inoculated his finger. It is important to remember this, because nothing could be gained, but the sources of mischief would be multiplied, by the mere creation of additional depositories for the *materies morbi* of scarlet fever or any other disease. We do not want a "convalescent home for scarlet fever," as the leading journal curiously puts it, but a house or houses where convalescents from that disease can be purified and the débris of their morbid tissues destroyed. If nothing is to be done with a view to the imprisoning and destruction of the extruded particles of organic poison, no great good will be accomplished. Practical sanitarians would do well to turn their attention seriously to this matter of disease-germicide (another form of vivisection) coincidental with the endeavour to supply the metropolis with homes or refuges for the convalescent from scarlet fever. It must, however, be confessed that a great deal of nonsense has been written and spoken about the efficiency of "disinfectants" and "antiseptics." If it were possible to immerse every particle of diseased organism in a globule of carbolic spray, the virus of disease *might* be devitalised, though even this is doubtful, so tenacious of life are the mischief-working elements and agents of mortality. No more confidence can be reasonably placed in fumigations than in intestinal flatus, which probably do not touch the particles they are meant to influence, or washings that do even detach the clinging fragments of cuticle or fabric pellets of excreted débris, from the meshes of the fabric in which they are entangled. Let anyone who reposes great confidence in the popular methods of "disinfection" try an experiment so crude as that of attempting to slaughter a cloud of gnats with a mitrailleuse-like shower of strong carbolic spray, or set himself to cleanse a square foot of woollen or even linen cloth from the impregnations of sooty smoke. It is easy to theorise on the action of disinfectants, but a vastly different matter to test their application *practically* and thoroughly with apparatus capable of a minute observation of results. We are not seeking to discourage sanitarians, but it is desirable to point out that the need of establishments for the isolation and disinfection of the convalescent from fevers, particularly the exanthematous, is as great as it is urgent, and that mere isolation will not suffice if disease is to be stamped out—as there is scientific reason to believe it might be—if society only deemed it worth the pains and expense to make a serious onslaught.

THE Guildford Rural Sanitary Authority are about to have the opportunity of considering, on the motion of one of the members, the propriety of reappointing the district medical officers of the union medical officers of health, each in his own poor-relief district. We assume from the terms of the motion that this arrangement has been found as unsatisfactory in its working here, in view of the performance of a medical officer of health's duties, as it has been found elsewhere; and we welcome this indication of rural sanitary authorities themselves, on the instigation of their own members, taking this subject into consideration. Hitherto it has rested with the Local Government Board as a general rule to initiate action in this direction, but this is much less satisfactory than a rural sanitary authority itself raising the question, and considering it in the light of recent experience. It is true that the Central Authority has for some time intimated that they look with disfavour on the appointment of district medical officers as medical officers of health, and no doubt this opinion has been communicated to boards of guardians acting as rural sanitary authorities generally. Nevertheless these officers do so act in not a few districts, but accumulating experience declares more and more against associating the two sets of duties in the same hands

Theoretically considered, there is much to be said for

having the medico-sanitary supervision of a district in charge of the individual who has the medical relief of the poor. The nature of his medical duties seems so eminently adapted to facilitate the execution of public health duties, and in a few exceptional cases this may really have been the case. But the general experience of these appointments tells decisively to the contrary. The invidious position in which a practising medical man is placed with regard to his patients in exercising public health duties operates in the most formidable manner with a practitioner whose livelihood depends upon his practice, however conscientious he may be, in deterring him from the strict performance of these duties. Moreover, the exigencies of practice are too commonly inconsistent with the due performance of public health functions, particularly in times of epidemic diseases, when the calls of medical practice and requirements of public health duty both reach a maximum, and one must needs be sacrificed to the other. Of necessity, in these circumstances public health goes to the wall. Then, again, the district medical officer is placed in a peculiar position towards his sanitary authority. Hitherto his pay as medical officer of health has been held as simply a petty addition to his salary as district medical officer. No opportunity has been lost of impressing upon him, in actions if not in words, that medical relief duties are of infinitely greater importance in the eyes of his authority than public health duties. The object of his appointment as medical officer of health is thus very seriously frustrated from the beginning, and the district medical officer perfectly well knows that (the regulations of the Local Government Board notwithstanding) he is not expected to do more—that is to say, not to give greater value to his public health work—*than he is paid for*. What wonder then, these points alone considered, that the appointment of district medical officers as medical officers of health has generally proved fatal to the due performance of the duties of that post.

Let us hope that the Guildford Rural Sanitary Authority will set a wise example, and merge the appointment of their several district medical officers of health into a single appointment, to be held by a medical man not in practice.

Annotations.

"*Ne quid nimis.*"

THE INTERNATIONAL MEDICAL AND SANITARY EXHIBITION.

THE proposal to hold during the International Medical Congress an exhibition of sanitary and medical apparatus is one which we trust will meet with that success which it appears to us to deserve. It is obviously desirable at a time when British and foreign medical practitioners will be assembling in London in unprecedented numbers to discuss the various scientific questions connected with medicine, that an opportunity should be afforded to those who are mainly occupied in aiding and abetting the practice and art of medicine, of displaying before the profession and certain sections of the public all that is best and newest for the prevention, the detection, and the cure of disease, and for the alleviation of those whose sufferings are incurable. It was perhaps impossible for the Congress, as such, to organise an exhibition; and it is fortunate that a representative body like the executive committee of the Parkes Museum, composed of men who are well known as sanitarians, physicians, and surgeons, was found ready and willing to take upon itself the trouble and responsibility of such a task. Although the Congress has relegated the duty of organisation to an independent body, it has nevertheless marked its approval of the scheme by a formal resolution passed at a meeting of the Executive Committee on November 16th; and the president-elect of the Congress in his private capacity seconded the application which was made to the Commissioners of 1851 for space at South Kensington. The application made to the Commissioners has been acceded to, and a certain amount of space in the buildings at South Kensington has been granted for the purposes of the exhibition. Directly the space was granted the executive committee of the Parkes Museum held a meeting and passed a resolution to the effect, as was stated in our issue last week, that they were willing to organise the exhibition, "*provided a sufficient guarantee fund be obtained.*" This is a necessary proviso, for the Parkes Museum has no funds available for such a purpose, and it could not be expected of the members of the executive committee to take the risks of such an undertaking on their own shoulders. We doubt not that a guarantee amply sufficient to cover all risks will be forthcoming, for it would be very short-sighted of those engaged in medical industries to allow the opportunities for an exhibition which the current year will afford, not to be utilised. For the purposes of this exhibition a sub-committee will be formed by the executive committee of the Parkes Museum, and certain persons of eminence connected with the pharmaceutical and other medical and sanitary industries will be invited to join it. It is proposed, we believe, that the exhibition should open about the middle of July, and close with the Congress (on August 9th), and it is also proposed that on the two final days of the exhibition sale of articles should be allowed, in order to afford visitors to the Congress an opportunity of acquiring any object they may desire. The scope of the exhibition is to be wide, and all branches of sanitation will be included. In addition to sanitary apparatus, there will be classes devoted to the exhibition of—1, hospital construction and arrangement; 2, surgical instruments and apparatus; 3, appliances of the ward and sick-room; 4, drugs, disinfectants, and medical dietetic articles; 5, electrical and optical apparatus; 6, microscopes and other apparatus used in the investigation and relief of disease; 7, appliances used for the treatment of sick and wounded in time of war.

PATHOLOGICAL SOCIETY OF LONDON.

AT the annual meeting of the Society, held on Tuesday last, the members nominated by the Council as officers and Council for the ensuing year, published in our last number, were duly elected. The annual report, read by the secretary, showed the Society to be in a very flourishing condition, the number of members is gradually increasing, and now reaches the high total of 635, while the balance in the hands of the treasurer is more than £100 larger than that remaining twelve months ago. Dr. T. S. Dowse moved that the reports of the Council and treasurer be adopted and printed in the next volume of the Transactions; this was seconded by Mr. W. A. Meredith, and carried. Mr. Pollock proposed a vote of thanks to the President, J. Hutchinson, Esq., for the very able manner in which he had filled the office during the last two years, and spoke in high terms of the value of Mr. Hutchinson's services. It was carried by acclamation, and responded to by the President, who expressed his indebtedness to the Council, secretaries, and members of the Society for their co-operation and support. When elected President he was anxious that the meetings of the Society should be as attractive as possible, and, remembering what a useful school they had proved to himself, he was desirous

that as many specimens as possible of the rarer pathological changes should be exhibited, and that the Transactions should be enriched with original and, as far as possible, thoroughly trustworthy communications. The difficulty in carrying out such a plan lay in the want of time; he had therefore suggested the plan of showing some specimens by card, without oral description, and, although the plan was still on its trial, he thought it was working well, and would be found to be very useful. He had hoped also to be able to place the Society in connexion with provincial pathological societies, and to exchange the more valuable specimens shown, but hitherto this had not been arranged. He thought it very desirable to encourage the exhibition of living illustrations of pathological changes, and for this purpose some fresh and better arrangements for their display were necessary. He had found regular attendance at the meetings very useful, and was sorry that he should lack the compulsion to attend them in the future. Dr. Longhurst and Dr. D. Powell proposed and seconded a vote of thanks to the retiring vice-presidents and members of council for their services. It was carried, and briefly acknowledged by Mr. J. R. Godlee. A vote of thanks to the retiring secretary, Mr. Morrant Baker, was proposed by Dr. Ord in eulogistic terms, seconded by Mr. McCarthy, and carried by acclamation. Mr. Baker, in acknowledging the compliment, referred to the able and courteous assistance at all times rendered him by Mr. Wheatley.

MIND IN WORK.

IT is set forth on the highest authority that whatever we do should be done with our *might*. This precept being interpreted means that there should be mind in work. The difference between a work of art and the product of machinery lies in the presence of a mark of mind directing the handiwork in the one case, while the other is simply a predetermined result produced by a duly formulated process wherein or whereby physical forces are directed and controlled by other physical forces on a set plan, to perform a defined series of actions, which *must*, in the nature of things, end in the production of the effect foreseen. Mind sets the one process, or series of processes, in operation, and they work out their physical destinies. In the other, mind is the active controlling power throughout. Starting from these premisses, we are now concerned to point out that little or no success can be expected in any calling which does not suit the temper and bias of the mind pursuing it. There cannot be "might" or earnestness—of the best sort—in an uncongenial enterprise. It is not necessary that an occupation should be ardently loved, but it is indispensable that there should be some special fitness for a calling if the powers of mind are to be resolutely and effectually engaged. Medical men see a great deal of life, and nothing strikes the observant family practitioner more than the number of feeble, sauntering, and loitering minds with which he is brought into contact. No inconsiderable proportion of the common and some of the special ailments by which the multitude are affected may be traced to the want of vigour in their way of living. The human organism is a piece of physico-mental machinery which can only be successfully worked at a fairly high pressure. It will almost inevitably get out of gear if the propelling force is allowed to fall below a moderately high standard of pressure or tension, and that degree of tension cannot be maintained without so much interest as will secure that the mind of the worker shall be in his work. It is curious to observe the way in which particular temperaments and types of mental constitution are, so to say, gifted with special affinities, or predilections for particular classes of work. The men who work in hard material are men of iron will, which is equivalent to saying that the men of what is called hard-headed earnestness find a natural vent for their energy in work that requires and consumes active power. On the other hand, the worker in soft materials is commonly either theoretical or dreamy. There is a special type of mental constitution connected with almost every distinct branch of industry, at least with those branches which have existed long enough to exercise a sufficient amount of influence on successive generations of workers. We are all familiar with what are called the racial types of character. It would be well if some attention could be bestowed on the industrial types, both in relation to educational policy and the study of mental and physical habits in health and disease.

EDINBURGH ROYAL INFIRMARY.

DURING the year ending Oct. 1st, 1880, 5013 patients were admitted into the infirmary; of these 2559 were dismissed cured, 1439 relieved, 423 on other grounds, while 436 died; 358 were cases of fever. The daily average number of patients was 469, and the average time of residence in the house was 31·6 days; 15,000 out-door patients were attended to. The ordinary income for the year was £21,540, and the ordinary expenditure £27,818, the excess of expenditure being more than met by the extraordinary income, which for the year amounted to £18,255. During the year the managers had paid £28,691 on account of the cost of the new infirmary, and it was thought that £20,000 would be required. The furnishing of the new building had been completed in a way leaving nothing to be desired.

SHAM DOCTORS IN SOUTH LONDON.

IT is eminently satisfactory, both from a public and professional point of view, to observe that coroners and juries are beginning to justly appreciate the dangers arising from the unchecked practice of sham doctors. Without losing sight of the fact that there is no law compelling the employment of registered medical practitioners in cases of illness, it is of the first importance that the public should be protected from the risk of employing quacks, herbalists, and other pretenders of the healing art, under the misapprehension that such persons are real doctors. Fortunately there is a law which, unsatisfactory as it is, may be used to check an abuse, the extent of which in many localities is little dreamed of by the public and is far too easily acquiesced in by the profession. Although in some sparsely-populated parts of the country medical attendance is not within easy access of the sick, and is on this account frequently not sought, by far the largest proportion of the nearly 25,000 uncertified causes of death annually registered in England and Wales arises from the practice of unqualified medical practitioners. As the law at present stands an inquest provides the only machinery for satisfactorily ascertaining the cause of death in such cases, and also whether the relations of the deceased person intentionally and knowingly called in an unqualified in preference to a qualified medical practitioner. The large proportion of uncertified deaths, and by fair inference of irregular medical practice, in South London, compared with the rest of the metropolis, have frequently been referred to in these columns, and two cases publicly reported during the past week fully and usefully expose the manner in which the sick poor are imposed upon by sham doctors. At the Lambeth Police-court a man, who has been practising in the Walworth-road, Newington, pleaded guilty to three distinct charges in respect of offences under the Births and Deaths Registration Act, 1874, and also under the Medical Act, for giving a certificate as a member of the Royal College of Surgeons and an Associate of the Apothecaries' Society. The aggregate fines in respect of the three summonses amounted to £22. In this case the unqualified practitioner placed himself within easy

reach of the law by giving a false certificate. Unfortunately, however, this legal offence is avoided by the larger proportion of sham doctors, and although registrars may report uncertified deaths to coroners, and although coroners may hold inquests, and thus fully expose the mischief of such irregular practice, the evil is scarcely held in check.

WANTON CRUELTY UNDER THE GUISE OF SPORT.

Is there any superfluous energy which is not worked off by associations like those for the Obstruction of Scientific Inquiry by the Suppression of Vivisection? If this is not the formal title of the organisation it expresses the idea. A field admirably adapted for the exercise of pity and effective interference offers itself in connexion with the monstrous pastime of pigeon-shooting. We have again and again called attention to these atrocities, committed under the pretence of "sport," and bringing unmerited contumely on the legitimate enterprise of the true sportsman, who would no more be guilty of pigeon-shooting *à-la-mode*, than he would of chasing cats or flying cockchafers with pieces of cotton attached to their legs. There is a wondrous combination of brutality and imbecility in the slaughter of tame pigeons which makes the "amusement" difficult to describe. It has been asked whether a substitute could not be devised. A flight of toy bomerangs, or feathered tops, of the Lowther Arcade pattern, would afford fully as much diversion as the doomed consignment of pigeons sent to be slaughtered for the afternoon's entertainment of the women in satins and sealskins who frequent the places where this hideous cruelty is practised. The only objection to substituting inanimate objects for the present victims would be that inasmuch as the feathered top and the toy bomerang would move, which the dazed and exhausted pigeons often refuse to do, the gallant sportsmen might find it difficult to make a decent score! There are, doubtless, devices by which a fair proportion of hits could be secured, but this we leave to the initiated. Suffice it, in the interests of humanity, as well of the suppression of cruelty to animals, to enter another protest against a practice which is nothing more or less than a wanton burlesque of sport.

THE EXCRETION OF LIME.

MANY investigations have been directed to the determination of the amount of lime excreted in various pathological states, and many observations exist of changes in the excretion. One of the earliest observations was that of Prout, relating to the phosphatic diathesis, which was recognised by the deposit in the urine. Later an increased excretion of earthy phosphates was assumed to exist in many diseases of the nervous system and kidneys, and a diminished excretion in some other diseases. Beneke studied the mode of formation of oxalate of lime in the organism, and Senator has directed attention to the variations in the amount of lime excreted in various conditions. The last contribution to the subject is contained in an article in the current number of Virchow's *Archiv*, by Dr. Schetelig. The method of estimation which he has employed is the precipitation of the lime by oxalic acid; the precipitate was dried and dissolved in hydrochloric acid, and the lime precipitated by soda. The phosphoric acid was estimated by means of acetate of uranium.

The first question to determine was the amount excreted by normal individuals, since the statement of different authorities on this point differ largely, varying from 100 to 500 milligrammes. Experimenting on himself during eight days, the excretion was found to vary from between 350 and 500 milligrammes. It is greatest, like the other solid constituents, in the morning urine, and, when no breakfast was taken, the minimum was found in the urine passed just before the midday meal. Five hours later the quantity was greater; ten hours after the meal it was greater still. The excretion seems thus to bear relation to the material taken at a meal, and to the process of intestinal digestion. In starvation, accordingly, the excretion of lime almost ceases. On two days the midday meal was omitted, and on a third only an extremely small quantity of solid food was taken; the morning excretion of lime fell to an average of 70 milligrammes, and once only 35 milligrammes were noted.

The long delay after food before the amount of lime is increased in the urine makes it probable that it passes through the organism in some other path than, for example, that taken by the haloid salts, which find their way into the urine in a very short time. From a long series of observations the conclusions were drawn that carbonate of lime, even when given in very small quantities and with much water, is quickly absorbed and appears in the urine. The lime-phosphates of meat are, to a small extent, transformed into chloride or directly absorbed, but for the most part pass with the albumen into the small intestine and into the lymphatic vessels, but need the presence of the hydrochloric acid of the stomach for their preparation for absorption. The ingestion of water assists the passage of the lime into the vascular system in a very striking manner. No pathological increase in the excretion of lime could be demonstrated in chronic diseases of the thoracic organs or of the central nervous system, and seems to be improbable. The amount of phosphates in the urine is apparently regulated by the process of intestinal digestion and absorption, rather than by the conditions of the cell-life of the body. The best means of counteracting the effect of the ingestion of lime is the free administration of water and chloride of sodium, or of hydrochloric acid.

"THE SLEEPING GIRL OF TURVILLE."

WE have been favoured by Mr. Henry Hayman, F.R.C.S., of Stokenchurch, with the sequel of the above case, noticed in the issue of the 12th of last June:—"It may be interesting to your readers to know that a change has taken place in the girl. I was called to see her about three weeks ago, and on the occasion of my visit I took her hand in mine, and said to her: 'Ellen, if you know me, and all around me, and everything that is said, squeeze my hand.' This she did *firmly*. I repeated the same words, and she again squeezed my hand. To-day I have visited her again, and have had a conversation with her. She has opened her eyes, and answers every question put to her. She takes plentifully of nourishment many times a day, and she hopes soon to be able to sit up. Her general health, in every respect, is quite regular."

THE ABUSE OF OPIUM.

ATTENTION is once more attracted to the alleged widespread abuse of opiates. Some attempt has been made to discredit the medical profession on the score of this evil by attributing the indiscriminate recourse to narcotics to the frequency of their use for medical purposes. The two things have nothing in common. As well might the lazy practice of lying-in-bed be referred to the fact that medical men recommend rest in a recumbent posture during the persistence of most acute diseases. What may be deemed expedient in sickness is not, also and therefore, to be deemed desirable in health. Those who take opiates or quack and advertised remedies for "sleeplessness" habitually, because they have been directed to take them when suffering from special maladies and while under medical treatment, can find no valid excuse for this abuse in the use they plead. It is ridiculous to blame medical men for the drunkenness of the weak-minded, or their addiction to the consumption of

"anodynes" and "sleeping-potions." Medical practice cannot be affected by criticism of this class. It is unprofessional to prescribe remedies which are not public property. We have not a word to say in apology for physicians who employ patent medicines or use private formulæ; but whatever a practitioner of medicine believes to be good for his patient he must use, whether the short-sighted blame his judgment or whether they are obliging enough to credit him with the possession of a scientific intelligence. No advantage to public health and happiness is likely to be gained by the promulgation of strictures such as those which have recently found their way into the public press. We mention this matter only to disclaim the slightest thought of being moved by these feeble outpourings of mistaken and misleading sentiment.

THE UNIVERSITY OF EDINBURGH.

THE Matriculation Returns of the University of Edinburgh for 1880, and published under the head of "University Intelligence" in *The Times* of January 4th, are very remarkable. The aggregate number of students who matriculated during the year was 3172, being 316 more than on the previous register. These were divided among the different Faculties as follows: in the Faculty of Arts 1020 students, in that of Divinity 78, in that of Law 440, and in that of Medicine no less than 1634. The nationality of the medical students is interesting. From Scotland there were 679, from England 558, from Ireland 28, from India 112, from different British colonies 204, and from foreign countries 53. Thus 41 per cent. of the students are Scotch, and 34 per cent. are from England. These facts supply material for much speculation. The Scotch nation has long shown its aptitude for the professions. But it looks as if the profession of Medicine is as much in the ascendant now as that of Divinity used to be. In estimating, however, the small number of Divinity students as compared with those of the other Faculties, it is necessary to remember that Scotland is now theologically a very divided country, and that the various churches have all their own theological schools, with often very able professors. It would be foolish to attribute the growing popularity of the Scotch schools, and notably that of Edinburgh, to anything so much as the growing efficiency of the work they do, of the laboratories and hospital which have been erected and furnished, and the devotion and ability of the professors, who are rewarded for making teaching the main object of their lives. The medical legislation of 1858 has doubtless had something to do with it by introducing reciprocity of practice, and making the degrees of the University valid legal instruments for purposes of practice all over the British dominions. But too much must not be attributed to this circumstance; for, as Professor Turner, in an address lately published in our columns, showed, the fame of one Scotch professor of anatomy (Munro Secundus) attracted a class of no less than 436 a hundred years since, when the population of Scotland was about a third of what it is now. Only a small proportion of those studying in the Scotch Universities take degrees. In the year 1880, of the 1634 medical students (many of course students in the first and second years only), 153 took degrees—viz., 29 that of M.D., 129 the double degree of M.B. and C.M., and 5 that of M.B. only. The present demand on the teaching of the Scotch Universities was not reached in a steady and progressive way. After the now regulations for degrees resulting from the appointment of a Royal Commission in 1858, including amongst other things a preliminary examination in Arts, conducted by Arts professors, a great falling off in students took place, so that in 1868 and 1869 the total number of medical students fell to 403. It has risen since by "leaps and bounds," and must tax all the resources of the University and its teachers.

UNQUALIFIED PRACTITIONERS.

MR. PAYNE, the Southwark coroner, commented lately very properly on the facts connected with the death of Mrs. Martha Lersty, of Southwark Bridge-road, who called in a person who represented himself to be Dr. Harding, of Great Suffolk-street, but who was afterwards discovered to be a chemist named Wardley. Mr. Payne said several cases had come under his notice as coroner in which Wardley had passed for "Dr. Harding," whose name was on his door. He had reprimanded him. In one case the jury had found that Wardley's conduct had accelerated, if not caused, death. The coroner intimated that he had brought the facts under the notice of the General Medical Council, but, of course, "in spite of this the practice was still continued." Is there any other country in which such misrepresentation as this is allowed to go unchecked? Impositions practised on people in health, and with their wits about them, is a crime that commands the attention of police and law courts; but imposture committed on dying people is, it seems, nobody's business. Mr. Payne has at any rate discharged his duty as a coroner in exposing the great scandal, which exists on an enormous scale.

THE ROYAL COLLEGE OF PHYSICIANS, AND SIR WILLIAM GULL AND DR. PAVY.

THE profession naturally looks for some adjudication of the questions of etiquette and procedure which were raised in connexion with the inquest held some months ago on a patient who died in Guy's Hospital. The matter was, it will be remembered, referred to the Censors' Board of the Royal College of Physicians for decision. The statements of Dr. Pavy and Sir William Gull are, we believe, now before the Board, and it will be agreeable to the feelings and interests of all parties that the deliberation shall be brought to a satisfactory issue without needless delay.

GLASGOW ROYAL INFIRMARY.

IN the course of a letter addressed to the public, containing an appeal for more liberal support, Mr. Wm. McEwen states that in the above institution "treatment is much more expensive now than formerly; as looking back to the time when the new surgical hospital was opened I find the expenses then were only about £14,000, as against £24,000 now, owing chiefly to large increase in general and working staff, absolutely necessary, with better wages and more generous diet both to patient and staff, but still at a rate of cost less than in any similar hospital. Against this increased cost, however, may be mentioned that 646 patients died in 1863, 763 in 1864, and 740 in 1865. In 1879 the number who died was 463, and last year 477. It may not be right to associate these as cause and effect, but still it is a remarkable fact, that with the increased care and more expensive treatment every year the mortality seems to come down."

PAYING PATIENTS AT ST. THOMAS'S HOSPITAL.

THE Governors of St. Thomas's Hospital have at length announced that they will be prepared, in the course of the present month, to receive into St. Thomas's Home persons of the upper and middle classes who are able and willing to pay for the benefits of medical attendance and nursing. Two wards in one of the end blocks, away from the rest of the hospital, have been set apart for the reception of these patients, and a resident medical officer has been appointed to take exclusive charge of these patients for their ordinary treatment, though each patient will have the option of employing at his or her expense any legally qualified practitioner in consultation with the resident medical officer. Though the Home, like the Hospital, is controlled by the

governors, the medical administration will be wholly distinct from that of the hospital. The honorary medical and surgical officers of the hospital are, as regards the Home, on the same footing as any other legally qualified medical practitioner. The honorary officers were elected to administer the medical charity, and have steadily and persistently stood aloof from the proposal of introducing paying patients into the hospital buildings. As it is, the wards that have been prepared for the reception of paying patients have not been used for many years in consequence of lack of funds, are approached by a separate gate and entrance, and are consequently distinct from the hospital as a charitable institution. On the other hand, the governors, apparently pleased with the idea of receiving paying patients, have resolved to admit into the ordinary wards patients who, though poor, can yet afford to contribute something towards the cost of their maintenance. No difference will be made as regards attendance and nursing between these patients and those who receive purely gratuitous aid.

THE RED CROSS IN THE RUSSO-TURKISH WAR.

A REPORT has been published by the Russian Red Cross Society showing the part played by this Society during the Russo-Turkish War of 1877-78. It appears that the Society established 13,120 beds, and that a total of no less than 24,973 were founded by voluntary agencies in conjunction with the Red Cross Society. The Society, moreover, gave succour to 116,296 patients, among whom were 1238 officers. The deaths of patients under their care amounted to 2863. The Society's staff consisted of 300 medical men, including subsurgeons, and 1214 attendants.

PUBLIC LAW AND THE PLAGUE OF SMALL-POX.

ONLY those who are behind the scenes know how heavily the first warning notes of a great epidemic of small-pox are falling upon the ear of those who have ears to hear. Meantime, it is pitiable to see how helpless those public bodies are to whom the public naturally look for prompt measures of isolation and revaccination. Dr. Brewer, the President of the Metropolitan Asylums Board, in a letter to *The Times*, shows how he and his colleagues are paralysed in using a great small-pox hospital, for fear of incurring a liability to personal damages to the amount of £20,000. The Local Government Board has, as yet, given no sign in its whole history that it realises the gravity of its responsibility as a sanitary authority.

ZULU WAR MEDAL.

WE understand that the medal for the Zulu war is now in course of distribution. We recommend any medical officers who may be entitled to but have not yet received it, to communicate their present address to the Director-General, A.M.D., with a request that their medal may be forwarded to them.

THE *Publishers' Catalogue* (Messrs. Sampson Low, Searle, and Rivington) contains, in accordance with its usual custom, an Analytical Table of the Books published in the past year. By this table it appears that during 1880, Medical and Surgical literature has been enriched by the addition of 202 volumes, fifty-four being new editions, as compared with 189 (53 new editions) in 1879. It is interesting to note that in point of number of works issued, of the whole fourteen sections into which the subjects of the books are divided, only three—namely, those of "Law, Jurisprudence, &c.," "Poetry and the Drama," and "Belles Lettres, Essays, &c."—fall below that of "Medicine and Surgery." The highest place, numerically, is occupied, as perhaps might have been expected, by the section "Theology and Sermons."

THE following resolutions were passed at the meeting of the Society of Medical Officers of Health held on the 17th of December, 1880, Dr. Bristowe in the chair:—1. "That in the opinion of this Society it is desirable, having regard to the more effectual prevention of the spread of zymotic disease by the agency of milk, that the special sanitary supervision and inspection of cowsheds, dairies, and milk-shops, should be entrusted by the local authorities to the medical officers of health, and the sanitary inspectors of the respective districts. 2. That in the opinion of the Society all cases of uncertified deaths should be reported by the local registrar of births and deaths to the coroner, who should, when there is no *primâ facie* ground for holding an inquest, direct each case to be investigated and reported on to him by a registered medical practitioner. The Society are also of opinion that there is no special reason why such investigation should devolve on the medical officer of health as any necessary part of his ordinary duties."

THE Council of the Faculty of Physicians and Surgeons of Glasgow have agreed at their next meeting in the beginning of February to consider any applications which may have been made for the position of Faculty Lecturer for 1881. The lectureship, which is open to the whole profession, was established several years ago, mainly for the purpose of giving encouragement to original research. The subject may lie in any department of medicine, theoretical or practical. The lectureship has been held in former years by Dr. R. W. Richardson and Professor M'Kendrick.

THE Lettsomian Lectures will be delivered by Sir Joseph Fayrer, at the rooms of the Medical Society of London, Chandos-street, Cavendish-square, on Jan. 10th and 24th, and Feb. 7th, at 8.30 P.M. The subject will be Tropical Dysentery and Diarrhœa.

THE death is announced of Dr. Julius Vogel, from cardiac rupture. The deceased was director of the Medical Clinique and Professor of Special Pathology and Therapeutics at Halle.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF THE MEDICAL INSPECTORS OF THE LOCAL GOVERNMENT BOARD.

Faversham (*Rural Sanitary District*). — This inquiry, which was conducted by Mr. W. H. Power, was called for in consequence of an outbreak of diphtheria in the parish of Herne Hill in the autumn and winter of 1878-79. But before the inquiry could be entered upon the outbreak had come to an end, and so long a period had elapsed since the cessation that it was found impracticable to recover such details as would help to a satisfactory elucidation of the circumstances under which the outbreak had occurred. The outbreak, as is so often the case in diphtheria, had been associated with much throat illness, to which various names had been given, extending over a much wider area of country than that in which diphtheria had been observed. The interest of the report rests in the account it gives of the state of sanitary administration in the district, which formed a second subject of inquiry. This district had been previously under the observation of the Local Government Board, and this portion of the inquiry was directed to ascertain what changes had taken place in its sanitary administration since an earlier inspection made by Mr. Power. The more recent inspection showed that a very distinct advance had been made, particularly in privy construction and management. It showed also the curious inconsistencies

which attach to our practice of self-government in these matters. The town of Faversham is partly in the rural sanitary authority's district. The rural sanitary authority has adopted excellent by-laws regulating the erection of new buildings; the urban sanitary authority has no by-laws on this subject. It happens, therefore, that the new houses built in the part of the town under the rural sanitary authority's management fulfil, as regards ventilation of drains, position, construction, lighting and ventilation of closets, those requirements which modern enlightenment have demanded, while in the portion of the town under the urban sanitary authority's management, the new houses fall very far short of a proper standard in most, and sometimes in all, of these particulars. In the same town one sanitary authority is doing its best to avoid for the future those evils of house-construction which underlie most of our unwholesome conditions; the other sanitary authority encourages the perpetuation of these very evils, fostering the growth, on the one hand, of the very mischiefs which, on the other, it is presumably endeavouring to suppress.

Enfield (*Urban Sanitary District*).—This is a report of an inquiry, made by Dr. H. F. Parsons, for the Local Government Board, into the prevalence of "fever" at Enfield and the general sanitary condition of the urban district. It furnishes anotheri natructive and somewhat detailed illustration of the deplorable insanitary conditions under which much of the cottage property has been erected in the populous suburbs outside the metropolitan area and presents a painful example of the slovenliness, negligence, and want of foresight of the local sanitary administration. Enfield has not neglected to expend certain sums on sewerage and water-supply, but that careful supervision of the district which is requisite to ensure that both the sewerage and the water-supply answer their purpose and that the requirements not only of the statutory law, but also of their own by-laws, are carried out is egregiously neglected. Moreover, these by-laws are quite inadequate to deal effectively with the speculative builders who are seizing upon the district to meet the flow into it of residents from the metropolis. The "fever" (enteric) is one of the evils which follow in the track of the infamous construction which too surely marks the work of the speculative builder when his proceedings are not most stringently regulated.

Clitheroe (*Rural Sanitary District*). — This district lies partly in Yorkshire, partly in Lancashire. Prevalence of diphtheria in a part of the district first took Dr. Airy into it, but his visit there resolved itself into an inquiry into the general sanitary state of the district. The bulk of the population, not exceeding 3000 in number, is engaged in the grazing farms which chiefly cover the district, and the villages and hamlets have the usual characteristics of unreformed rural places. The occupants, as a rule, however, are fairly well housed, but exposed to difficulties of water-supply, and imperfections of drainage and of filth disposal, such as are commonly found in such districts where the sanitary authority is a name and little more. The fact that Dr. Airy has been called upon to make a report of this sort is an indication of the mere nominal character of the local sanitary administration.

Millbrook.—Millbrook is a village in the rural sanitary district of St. Germans, Cornwall. It is situated at the head of a tidal creek communicating with the Hamoaze, and is a local health-resort. Hence, probably, its present condition; for the parochial committee of the rural sanitary authority, in public meeting assembled, does not hesitate to imply that it is of more importance to the villagers to retain their seasonal visitors than to amend their village. And the sanitary condition of this is such that if it were noised abroad (as it must be if attempts at improvement are made), "lodgers" would be frightened away. Now, this so-called "health-resort" (!) is about as abominable sanitarily as can readily be conceived; its tidal creek a big, stinking sewer, and its general arrangements for drainage and water-supply as foul as could well be. Enteric fever is endemic there, and if the history of its visitors for several seasons could be obtained, we have little doubt that it would be found that a large proportion of them carried with them when they returned home, disease, not health, obtained from their sojourn. A more than usually serious outbreak of enteric fever last year appears to have been brought to the notice of the Local Government Board, and Dr. Ballard was directed to investigate it. It is highly probable that this outbreak was caused by the dissemination of the infection of the disease in the milk of a dairy, kept under singularly slovenly and unwholesome conditions. In fact, Millbrook instead of being a "health-resort," is simply a "disease-trap," as so many so-called "health-resorts" unfortunately are.

SMALL-POX HOSPITAL ACCOMMODATION IN LONDON.

A deputation of the Metropolitan Asylums District Board, headed by the chairman, Dr. Brewer, had an interview with the President of the Local Government Board, Mr. Dodson, on the 30th ult., on the subject of small-pox hospital accommodation in the metropolis at the present time. The existing accommodation is practically occupied, the Asylums Board could not undertake the responsibility of purchasing new sites for hospitals while the appeal in the Hampstead Hospital case was pending, Hampstead Hospital was closed to them, further accommodation was wanted,—what were they to do? Would the Local Government Board assent to the Asylums Board providing accommodation for seventy additional patients on the site at Deptford? Mr. Dodson demurred to this proposition, observing that already there was a large number of patients at Deptford, and added that the Parliamentary Committee on the Hampstead Hospital had, he believed, expressed an opinion against the congregation of many small-pox patients on one spot. He admitted the difficulty arising from the appeal in the Hampstead Hospital case, and he thought that if the epidemic increased even seventy beds added to the present accommodation would be insufficient. He sympathised with the Asylums Board in their difficulty, saw that whatever was done by them must be done *immediately*, and—would consider the question. In other words, the Asylums Board look to the Local Government Board in their difficulty, as being mainly responsible for its having happened, and in the "emergency," to use Mr. Dodson's word, find the Board unprepared to advise them at the moment, although the question at issue has been agitating people interested in it any time the last six weeks! A more striking confirmation of the observations we ventured to make on the false position the different metropolitan authorities and the Central Authority have to each other on this subject of small-pox could not well be conceived.

Since this deputation Dr. Brewer has communicated to *The Times* of Jan. 5th, at the request of the Asylums Board, the following important statement of the position in which the Board is at present placed:—

"Sir,—At a meeting of the Asylums Board yesterday evening, convened for the purpose of making provision for the daily increasing number of persons afflicted with the epidemic of small-pox which is marching on the metropolis from the south-east, and sporadically present in the south-west and districts apparently unconnected with each other, the managers urged their chairman to communicate to the public, through the Press, that, while they are even increasingly anxious to protect the metropolis by the timely isolation of the infected and the effectual vaccination of those liable still to the worst forms of the disease, they are unable to enter the market for new sites or to appropriate any additional building for the isolation of the infected, because an injunction rendering the managers severally and jointly liable to a penalty of £20,000 is hanging over them if they again avail themselves of the Hampstead site, bought and fitted up by them expressly for the purpose of protecting the north and north-west of the metropolis, and constituting an integral part of the original design for providing protection to the whole of London.

"Until the final Court of Appeal has determined whether the 'public policy' expressed by Gathorne Hardy's Act of 1867 did or did not warrant, through the authority of the Local Government Board, the managers to purchase sites and erect buildings for the isolation of people affected with contagious disease of the humbler classes in such localities in the metropolis as the Government Board deemed best calculated to secure the object contemplated by the Act, it must be obvious to your readers that we are paralysed, so far as prospective action is concerned. It must not hence be conceived that the managers abate one jot of their anxiety to arrest the coming calamity: no men know better what is the liability of the 200,000 unvaccinated persons among a mass of well-nigh four millions, packed within an area of 75,362 acres. The sufferings to which we minister quicken, and not deaden, our sympathies; and while we are using every bed available and every means within our power to ward off or to provide for the needs which are pressing upon us, we feel ourselves bound to state frankly what it is which

limits our means and why we are forced to declare that we are not responsible for the suffering and mortality we must perforce anticipate, but cannot adequately provide for or guard against."

ANTI-VACCINATIONISTS' PARLIAMENTARY RETURNS.

Another of the series of Parliamentary returns called for by Mr. Hopwood, M.P., in the interest of anti-vaccinationists, has just been published under the signature of the Registrar-General. It relates to the thirty-two years 1847 to 1878, and is on the whole a valuable contribution to the statistics of small-pox and vaccination, especially as by the addition of information beyond what was asked for, the public is guarded against the erroneous and mischievous conclusions which were drawn from a previous and somewhat similar return. We commend the figures in this return to the attention of Mr. P. A. Taylor, M.P., who, it may be presumed, is preparing his indictment against compulsory vaccination. The proportion of fatal cases of small-pox occurring under one year of age in England and Wales, to the fatal cases at all ages, which averaged 25·5 per cent. in the six years 1847–52, did not exceed 12·9 per cent. in the six years 1873–9. The most marked change of proportion, however, appears at the ages between one and five years; at this group of ages the proportion declined between these two periods from 44·4 per cent. to 12·8 per cent. It is for those who deny the influence of vaccination upon small-pox mortality to assign some other reasonable explanation of the change in the proportions of small-pox mortality occurring at different ages since vaccination was made compulsory. The increase in the proportion of adult fatal cases of small-pox in recent years is a natural consequence of the marked decline of deaths from this disease occurring among children. It should, moreover, not be forgotten that the average annual death-rate from small-pox at all ages in England and Wales since compulsory vaccination was enacted has been less than half that which prevailed during the years of civil registration which preceded the passing of the first Vaccination Act.

The other point on which the present report throws useful light is the asserted increase of infant mortality since vaccination became more general. In a previous return called for by Mr. Hopwood tables showed that the deaths of infants from syphilis, scrofula, tabes mesenterica, skin diseases, erysipelas, phlegmon, bronchitis, diarrhœa, and atrophy and debility, including premature birth, had, in the aggregate, steadily increased during the past forty years. This fact gave rise to the misstatement that vaccination had caused a great increase in the rate of infant mortality. In the present return, in order the more effectually to guard against a repetition of this misapprehension, the Registrar-General has added a column showing the proportion of infant mortality from all other causes, demonstrating conclusively that the increased mortality from bronchitis, diarrhœa, syphilis, and scrofula, from whatever causes it may be due, is more than counterbalanced by the decline of mortality from other diseases. During the six years 1847–52 preceding compulsory vaccination, the proportion of deaths of infants under one year, from all causes, averaged 156 per 1000 births; whereas in the six years 1873–8 (the most recent dealt with in the return) the average annual proportion did not exceed 149 per 1000. How far improved or more precise diagnosis of infantile diseases may be the cause of the increased number of deaths recently attributed to bronchitis, diarrhœa, syphilis, and scrofula, it is needless here to inquire. It is, however, eminently satisfactory to find that the average rate of infant mortality is now five per cent., or one-twentieth, less than it was before vaccination became compulsory.

SCARLET FEVER IN SUNDERLAND.

The Health Department of the Sunderland Corporation have published a report by Dr. Yeld, their medical officer of health, on the epidemic of scarlet fever, now in the fifth year of its duration in the borough. He attributes the propagation and spread of the disease to the following causes:—(1) The non-isolation of the first case appearing in a family; (2) the indiscriminate intercommunication of the healthy with the sick; (3) children being allowed to attend school and public places of resort during the convalescent stage of the disease, and very frequently wearing the same clothes that they wore during the period they were suffering from the disease; (4) children attending school from infected houses; (5) children being allowed to attend funerals, and even to view the bodies, of those who have died from the disease; (6) the transmission of infected clothing and bedding from one house to another; (7) the want of early information of the outbreak of the disease in any house being forwarded to the Local Sanitary Authority, in the vast majority of cases the earliest information received being that from the registrar of deaths. Isolation, of all other means, is regarded by Dr. Yeld as the best for arresting the spread of infectious diseases; and he has some observations on this subject which we have little doubt will prove advantageous to his Health Committee. Sunderland, it appears, has an infectious disease hospital, provided on account of the small-pox epidemic of 1871, but which has not been as much used as it might have been since, particularly in view of arresting the spread of an infectious disease at the beginning. This, Dr. Yeld states, has not been from want of desire on the part of the sanitary authority, but on account of medical men and heads of families not having taken advantage of the boon offered them. "There cannot be a doubt," he adds, "that had even the limited accommodation of the House of Recovery been taken advantage of two or three years ago, the spread of scarlet fever, and its consequent fatality, would have been very materially diminished; neither is there any doubt that had the accommodation for the patients been found too small, the committee should have taken the matter in hand, and dealt with it in a practical, disinterested, and satisfactory manner." Dr. Yeld urges the Health Committee to recommend to the Town Council to obtain powers from Parliament compelling the notification of infectious diseases, such as have been obtained by several other municipalities.

SANITATION IN LEEDS.

The health of Leeds, judged by the monthly reports of Dr. Goldie, its medical officer of health, has recently been unusually satisfactory. According to the last monthly report issued, it appears that the annual death-rate in that borough during the four weeks ending the 27th of November did not exceed 19·9 per 1000, against 25·6 in the corresponding period of 1879. Infant mortality and the death-rate from the principal zymotic diseases were exceptionally low. It is to be regretted that Dr. Goldie persists in giving so-called rates of mortality at different groups of ages per 1000 of persons living at all ages. These rates for comparative purposes are not only useless, but frequently lead to entirely erroneous conclusions, as this method takes no account of the varying age proportions of the populations in different towns or in different parts of the same town. Useful rates of mortality at different groups of ages can alone be calculated with reference to the numbers living at each such group of ages. Leeds, like Salford and other large towns, has had its threatenings of small-pox, and Dr. Goldie seriously calls the attention of his sanitary authority, the Town Council, to the dangerous position of the town in consequence of its being unprovided with special hospital accommodation for the isolation of cases of this disease. It appears that one of the Local Government Board inspectors has recently made a special representation to the Town Council on the subject. The increased prevalence and fatality of small-pox in London adds considerably to the danger of infection incurred by all large towns in intimate railway communication with the metropolis. It is satisfactory to note that the 457 deaths registered in Leeds during the four weeks under notice included but eleven uncertified causes of death; these give a proportion of 2·3 per cent., against 4·0 per cent. in the three months ending September last.

DIARRHŒA IN WIGAN.

An elaborate report has been submitted to the Sanitary Committee of the Corporation of Wigan, by Mr. Barnish, their medical officer of health, on the prevalence of diarrhœa in the borough during the third quarter of the year. In this report Mr. Barnish shows that the disease is mainly confined to a particular season of the year, that it chiefly affects young children, is more especially a disease of crowded towns, and is mostly confined to the poorer inhabitants. High atmospheric temperature holds, he thinks, the first place in conducing to the disease, and after atmospheric temperature, in exercising the most important influence as a concurrent cause, he would place the artificial feeding of infants. He refers to the *dark* surroundings of life in the close courts and streets of Wigan as contributing also to the result. It would appear, however, that since Wigan began to abolish the old-fashioned

privy, or midden closet, and its foulness, and has substituted a pail-closet, the mortality from diarrhœa has distinctly decreased in the town and is, Mr. Barnish believes, decreasing; increased cleanliness of the surface of the courts, back-streets, and alleys helping to this result.

Here is a curious instance of the "Imperial Julius dead, and turned to clay," &c., serving to point a poor-law moral at the expense of a medical officer. At a recent meeting of the St. George's-in-the-East Guardians, complaint was made that the medical officer of the schools had of late been irregular in attendance, his place being supplied by substitutes. Whereupon a member observed that he had been reading in the course of the day of the death of "George Eliot," and noted that a regret was expressed that Dr. Andrew Clark had not been first summoned to her bedside, and so, probably, a greater chance of saving her life secured. He applied this to the children in these schools, of whose welfare they were the guardians, and would ask if this irregularity of the medical officer could be permitted to go on indefinitely when his presence or absence might involve the difference of life and death to a sick child. The medical officer should feel highly gratified that his individual services in the schools are ranked so highly.

Mr. Wynter Blyth, the successor of the late Dr. Whitmore as medical officer of health for Marylebone, has issued his first monthly report. It will chiefly attract attention for two suggestions he makes; the first (somewhat prematurely, it is to be feared) for preventing the spread of small-pox and scarlet fever by smearing the patients from head to foot with glycerine, and placing a bottle of ice-cold water a little before the mouth, and, in view of typhoid fever, for heating all milk to at least 212° F. before it is sold. Mr. Blyth states that he has submitted his first suggestion "to the ordeal of exact experiment, so far as the nature of things admits," whatever that may mean, and he uses these words in reference to his second suggestion, "It is time for the public to demand from the milk trade *germ-free* milk," as if the evidence as to the *germs* were as clear as the evidence as to excess of water in milk.

It appears that the Urban Sanitary Authority of Pontypridd is considering a scheme of laying down a system of sewers for slop water only, providing for excremental matters by dry-ash- or earth-closets. The ratepayers, or a section of them, take exception to this; and at a recent public meeting Dr. Hunter, a medical practitioner of twenty years' standing in the town, took objection to any scheme of drainage which did not include provision for the whole of the Rhondda Valley and its increasing population. A resolution was passed at this meeting requesting the Urban Sanitary Authority to defer the consideration of their scheme for three months, and to call for other schemes adapted for the requirements of the district.

An application made by the Sanitary Authority of Warrington for the compulsory removal of a patient to the fever hospital on the ground of imperfect isolation, has been refused by the magistrates. The medical officer of health and the medical man in attendance differed as to the degree of isolation which had been secured to the patient in a seven-roomed house. It was urged that the medical officer of health, having given a certificate to the effect that the patient should be removed, the magistrates had no choice, under the Local Act, but to give the order for removal, but the magistrates held the case was not made out. A case was granted for the Court of Queen's Bench.

The Right Hon. James Stansfeld, M.P., in an address delivered at the recent Poor-law Conference in Leeds, thought it was a mistake that boards of guardians should be under no control, and expressed his opinion that the central authority ought to counsel, inform, enlighten, and guide, and he believed the local authorities would willingly and gratefully respond to such policy. Hitherto it has been a case of the blind leading the blind with a vengeance, and local authorities, Poor-law and others, are beginning dimly to understand this.

Chesham has got into trouble for prematurely closing its infectious disease hospital. The medical officer of health says that the existing hospital is unfit to be occupied by sick persons in cold weather, and the sanitary authority hesitate to make it fit or to provide another and better hospital. Meanwhile the need for a hospital continues.

We understand that W. Meymott Tidy, M.B. Lond., has resigned his post as Public Analyst for the County of Essex.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

Mainly owing to delay of registration in the previous week, due to Christmas-day falling on Saturday, the registered mortality in the principal English towns showed an increase last week. In twenty of the largest English towns, estimated to contain in the middle of this year nearly a third of the entire population of England and Wales, 5035 births and 3408 deaths were registered last week. The births were 150 below, while the deaths exceeded by 133 the average weekly numbers during 1879. The deaths, owing mainly to the cause above stated, showed an increase of no less than 739 upon the exceptionally low number in the previous week. The annual death-rate, which had steadily decreased from 22·1 to 18·6, rose last week to 23·7. The lowest death-rate in the twenty towns last week were 15·7 in Newcastle-upon-Tyne, 15·9 in Portsmouth, 18·8 Sheffield, and 19·3 in Bradford. The rates in the other towns ranged upwards to 27·2 in Salford, 28·0 in Oldham, 29·5 in Wolverhampton, 29·8 in Liverpool, and 30·3 in Nottingham. During the thirteen weeks of the quarter just ended the death-rate in the twenty towns averaged only 21·5 per 1000, against 25·0 and 24·2 in the corresponding periods of 1878 and 1879.

The deaths referred to the seven principal zymotic diseases in the twenty towns, which had been 375 and 342 in the two preceding weeks, rose to 398 last week; they included 137 from scarlet fever, 84 from measles, 72 from whooping-cough, and 48 from fever, principally enteric. The annual death-rate from these seven diseases averaged 2·8 per 1000 in the twenty towns; it ranged from 0·7 and 1·0 in Plymouth and Newcastle-upon-Tyne, to 5·5 and 5·8 in Wolverhamptom and Sunderland. Scarlet fever showed the largest proportional fatality in Sunderland, Bristol, Oldham, Wolverhampton, and Norwich; fever, principally enteric, in Wolverhampton, Norwich, and Leicester; and whooping-cough in Leeds, Hull, and Sunderland. Small-pox caused 17 more deaths in London, whereas no fatal case of this disease was recorded in any of the nineteen provincial towns. The number of small-pox patients in the Metropolitan Asylum Hospitals, which had steadily increased from 77 to 380 in the nine preceding weeks, further rose to 440 on Saturday; this was a larger number of cases than has been under treatment in these hospitals at any time since the end of June, 1878. The number of new cases of small-pox admitted to these hospitals, which had been 132, 76, and 65 in the three previous weeks, rose to 146 last week. On Saturday last 28 patients were also under treatment in the Highgate Small-pox Hospital, corresponding with the number at the end of the previous week.

The deaths referred to diseases of the respiratory organs in London, which had been 307 and 290 in the two preceding weeks, rose to 353 last week, which were, however, no less than 189 below the corrected average number in the corresponding week of the last ten years; 218 were ascribed to bronchitis, and 82 to pneumonia. The annual death-rate from lung diseases (excluding phthisis) was equal to 5·0 per 1000 in London, 6·0 in Liverpool, and 5·9 in Salford.

In the twenty towns last week the causes of 107 deaths were not certified, either by a registered medical practitioner or by a coroner, being equal to 3·1 per cent. of the total deaths. The proportion of uncertified deaths did not exceed 1·7 per cent. in London, whereas it averaged 4·5 per cent. in the nineteen provincial towns. No uncertified deaths were registered either in Bristol or Nottingham; while their proportion was largest in Salford, Oldham, Sheffield, Hull, and Sunderland.

HEALTH OF SCOTCH TOWNS.

In eight of the largest Scotch towns, having an estimated population of rather more than a million and a quarter persons, the annual death-rate last week averaged 22·5 per 1000, against 19·9 and 20·8 in the two preceding weeks; this rate was 1·2 below the average rate in the twenty large English towns. The rates in the eight Scotch towns last week ranged from 19·1 in Paisley, and 19·5 both in Edinburgh and Perth, to 25·2 and 25·8 in Dundee and Leith. The deaths referred to the seven principal zymotic diseases in the eight towns, which had been 80 and 92 in the two preceding weeks, were 92 last week, and equal to an annual rate of 3·7 per 1000, against 2·8 in the twenty large

English towns. In the eight Scotch towns the zymotic death-rate last week ranged from 1·0 in Aberdeen to 4·4 and 4·8 in Leith and Glasgow; no deaths from any of these zymotic diseases were returned in Perth. The fatal cases of scarlet fever, which had been 17 and 29 in the two preceding weeks, were 30 last week, of which 12 were returned in Glasgow, 12 in Edinburgh, and 3 in Leith. Eight of the 12 deaths from diphtheria were returned in Glasgow, as well as 6 of the 7 deaths referred to "fever," which includes typhus, enteric, and simple continued fever. The 23 deaths from whooping-cough included 17 in Glasgow, and showed a further increase upon recent weekly numbers. The annual death-rate from acute diseases of the lungs (bronchitis, pneumonia, and pleurisy) was equal to 5·9 per 1000 last week in the eight Scotch towns, against 4·2 in London; the highest death-rates from these diseases in the eight Scotch towns occurred last week in Aberdeen, Dundee, and Paisley.

HEALTH OF DUBLIN.

The registered mortality in Dublin showed a further increase last week. The annual death-rate from all causes in the city, which had been equal to 25·9 and 27·0 in the two preceding weeks, further rose to 35·8 last week. During the thirteen weeks of the quarter just ended the death-rate in the city averaged no less than 32·6 per 1000, against 20·9 in London, and 21·8 in Edinburgh. The 216 deaths in Dublin last week showed a further increase of 53 upon the numbers returned in the two previous weeks; they included 27, or rather less than 13 per cent., which were referred to the seven principal zymotic diseases, and 6 more than the number in the previous week. Of these 27 zymotic deaths, 10 resulted from fever (typhus, enteric, and simple), 9 from scarlet fever, 6 from whooping-cough, and 2 from measles. The annual death-rate from these zymotic diseases was equal to 4·5 in Dublin, against 2·8 in London, and 4·1 in Edinburgh. The 10 deaths referred to fever in Dublin last week showed an increase upon recent weekly numbers, and were equal to an annual death-rate more than five times as high as the average rate from the same cause in the twenty large English towns last week. The fatal cases, both of scarlet fever and of whooping-cough, also showed an increase in Dublin last week. The deaths both of infants and of elderly persons only slightly exceeded the numbers returned in recent weeks.

THE AMERICAN CENSUS—ST. LOUIS.

Between defective registration of births, deaths, and marriages and doubtful census returns, American vital statistics are not yet held in much repute by statisticians. The rates of mortality which, according to official returns, are reported to prevail in the majority of the large American cities are incredibly low, so low as to forbid their acceptance as being even approximately correct. The rapid aggregation of town populations in America places great difficulties in the way of estimating their numbers in inter-census years, and in America, as in England, a census is only taken once in ten years. In England once in ten years the enumerated numbers, however, supply trustworthy figures as a basis for the calculation of vital and mortal statistics; while in America census numbers are not accepted as trustworthy, even by the local authorities, and when the counted numbers are not large enough to satisfy the general desire for big figures, it is not unusual to hear of clamour for re-enumeration. The city of St. Louis is a notable example of the difficulties which surround the preparation of trustworthy statistics for American towns. We have somewhat recently commented upon the untrustworthy mortality statistics officially published for this city, and the results of this census supplies a useful corroboration of the justice of our remarks. In 1860 the population of the city of St. Louis was estimated at 160,773, which had increased to 310,864, according to the government census, in 1870. In 1878 exaggerated ideas prevailing as to growth of the city in recent years, we were told officially that the estimated population by enumeration was stated to be 503,000. Since 1878 the population of the city has been taken as half a million, upon which all rates of mortality have been calculated. We have before us the summary for the year 1879, which gives the rate of mortality as only 12·3 per 1000; this alone should have suggested that the population was over-estimated, more especially as it appears that no less than 30·2 per cent. of the deaths from all causes were due to zymotic diseases. The first report of the population of the city enumerated at the recent census gave 324,196, but so dissatisfied were the authorities with this number that a re-enumeration has since been completed, which raises the population to 351,275. Even this number very far from satisfies the expectations of the city, although there is considerable rejoicing at this gain of 26,719 in the population. By using this number the death-rate in 1879 becomes 17·5 instead of the 12·3 officially reported, but even this appears to be too low a rate when it is remembered that 30·2 per cent. of the deaths were from zymotic diseases. It is impossible to guess whether we have yet had the last census of St. Louis for 1880, but if the figures given by the latest enumeration be accepted as approximately correct, it still seems more than probable that the death-rate is understated, probably through imperfect registration of the deaths. Vital statistics are now attracting considerable attention in America, and we are entitled to hope that ere long they will be rendered more trustworthy than they are at present. Improved system of registration has already been adopted in some of the States, but it is not so easy to devise safe precautions against the falsification of census returns for the purpose of flattering local aspirations for greatness.

HEALTH MATTERS GENERALLY AT HOME AND ABROAD.

SCIENCE AND SANITATION.

A recent number of the *Journal of Science* contains an article on the "Sanitary Millennium," which betrays a very shallow acquaintance both with its subject and with the true bearing of the statistics discussed. The article professes to be a review of a work by John Parkin, M.D., entitled "Epidemiology, or the Remote Cause of Epidemic Diseases in the Animal and in the Vegetable Creation," but is made the excuse for enunciating a disbelief in the "filth" origin of so-called zymotic diseases, and in the efficacy of vaccination as a protection from small-pox. The *Journal of Science* adjudges Dr. Parkin "perfectly successful in disposing of the two most popular theories—the dirt doctrine of the sanitary reformers and the notion of contagion." The arguments by which vaccination is sought to be discredited are the threadworn arguments which anti-vaccinationists repeat *ad nauseam*. We are reminded that, notwithstanding the more general adoption of vaccination, the fatality of the three small-pox epidemics in 1857–8–9, 1863–4–5, and 1870–1–2 showed successively a steady increase; no reference is, however, made to the fact that the average death-rate from small-pox since vaccination was made compulsory is just half what it was during those years prior to that legislation of which we have record. The steady proportional increase of the vaccinated among the victims of small-pox during the past half-century is also quoted as difficult to reconcile with the orthodox theory that vaccination is a safeguard against small-pox.

The assertion made by unscientific anti-vaccinationists, to the effect that small-pox is spread and distributed by vaccination, is in a measure adopted, regardless of the well-known fact that vaccination could as soon produce small-pox as measles could be caught from scarlet fever. In ridiculing the theory that the only cause of zymotic disease is dirt, our scientific contemporary asks, with reference to modern attempts at sanitation: "Have we not spent 300,000,000 of money in carrying out these teachings and in paying the fees of our teachers?" As an example of the futility of sanitary expenditure, Manchester is alluded to, and we are asked to believe that the death-rate in that city in 1811 did not exceed 13·5 per 1000, in order to show that, "in spite of all our modern sanitary reforms, the death-rate of the city has increased to more than double its amount in 1811." Manchester should not be quoted as an example of the success or failure of sanitary expenditure, as that city has scarcely kept pace with the other large cities of the United Kingdom in the energetic prosecution of sanitary progress. It is, however, beyond dispute among those acquainted with the history and mortality statistics of Manchester, that the sanitary condition of that city is very different from what it was at the beginning of the century, and that the death-rate as faithfully reflects the improvement which has taken place as that which is still needed. Whatever may be the authority for the statement that the rate of mortality

in Manchester, in 1811, did not exceed 13·5 per 1000, we must absolutely decline to accept this figure as correctly representing the average death-rate of that city seventy years ago. If this article had not found place in the columns of a journal which professes to represent science, we should have found it hard to accept, as seriously intended, its shallow attack upon the recent teachings of sanitary science.

CITY FILTH—THE WAR OF CLOSETS.

The poet's aspiration, that we might be given the gift of seeing ourselves as other people see us, is certainly superfluous in these days of a freely flowing press. The other people have not the least hesitation, and do not want the full opportunity of themselves stating what they think of us. M. le Dr. Van Overbeck de Meiges, professor of hygiene in the University of Utrecht, has favoured us with a very frank disclosure of his opinions regarding our position on sewage matters in this country, not very gratifying to our self-esteem, however useful it may be for our instruction ("Les Systèmes d'Evacuation des Eaux." Baillière et Fils, 1880). Dr. de Meiges, condemning us from the mouths of our own engineers and sanitary workers, depicts with an unsparing hand the shortcomings of our watercloset system and system of sewers, as compared with the advantages attaching to the dry-closet systems—such a system, for example, as is now being carried into force in Manchester; and he shows how what we now suffer from has not been peculiar to us, but has been experienced by all places where the "English system" of sewerage has been put in force. He maintains that our system is noxious whether used with or without irrigation, and that it is necessary that all fæcal matters should be kept out of our sewers, if we would escape mischief. It is war to the knife between him and the followers of Rawlinson. His argument has the faults of all one-sided views, but he brings together a very large quantity of material bearing upon the subject he discusses, and hence his work is very instructive and of great interest. He does not bring anything forward that is new to us of the defects of the "English system," but he omits to say much of the advantages which have been claimed. Those defects have prompted the experimental trials of the mixed systems of sewage disposal now in progress at Manchester and Rochdale and elsewhere in England. Those trials are a protest against the "English system," as Dr. de Meiges understands it, and are of a sort he would approve. We are content to wait the results of these trials before we accept so unqualified a condemnation of the water-system as he utters, and believe it will be found that both the dry and wet systems of filth-disposal have their proper place in sanitary administration.

The Rev. Septimus Hansard, the Rector of Bethnal-green, has set an example of citizenship in sanitary work which may be usefully followed. When first he entered upon his rectorship he was informed that neither flowers nor grass would grow on the rectory lawn, so inimical was the local atmosphere to vegetable life. Whereupon he resolved to better the atmosphere by ridding it of some of its smoke and foreign admixtures from neighbouring manufactories. He set himself to take notice of smoky chimneys, and by reporting them to the police, and taking advantage of the law of nuisance anent smoke, he contrived to ameliorate local states of atmosphere, so much that he is now reported to cultivate the choicest flowers readily.

A very foolish statement has been made at Chertsey with reference to a case of small-pox which has recently ended fatally in the Chertsey Union. It is implied that the nature of the disease was first mistaken by the medical practitioner called in at the beginning, and that the patient was improperly treated in the union workhouse. The terms in which the statement found its way into the local press prove that it emanates (thoughtlessly no doubt) from a source wholly unconscious of the foolishness contained in it. But how comes it that Chertsey has not an infectious disease hospital apart from the workhouse?

From Canada the news comes of the prevalence of typhoid fever in Montreal, the Health Office reporting 130 cases, the majority of which have been traced to defective drainage. Also a serious outbreak of diphtheria has occurred in the neighbourhood of Sandwich.

THE SERVICES.

WAR OFFICE.—2nd Life Guards: Surgeon Percy G. R. Young, from the Army Medical Department, to be Surgeon, *vice* H. P. Heneman, promoted into the 1st Life Guards.

ARMY MEDICAL DEPARTMENT.—Surgeon-Major C. G. Irwin, M.B., to be Brigade-Surgeon, *vice* W. C. Roe, granted retired pay; Surgeon-Major R. O. Hayden, from half-pay, to be Surgeon-Major.

Surgeon Albert Baird Seaman has been notified that he is to receive a medal and a gratuity of £100 in consideration of his services in the Khyber Pass.

Deputy Surgeon-General J. O'Nial, Army Medical Department, late Principal Medical Officer of the Candahar Force, has arrived in England, and has been appointed to the Administrative Charge of the North British District, Edinburgh.

In compliance with instructions received at Aldershot from the Adjutant-General, Horse Guards, the undermentioned officers of the Army Medical Department have proceeded from the Camp to Dublin for temporary duty in Ireland—viz., Surgeons-Major A. Macrobin and F. Waghorn, and Surgeon B. Connolly. These officers, on arrival at Dublin, have been directed to report themselves to the general officer commanding the troops and the principal medical officer. In consequence of the departure from Aldershot of the above-named officers, the following medical arrangements have been made at the Camp—viz., Surgeon-Major Leask to take medical charge of the troops of the Royal Engineers, Army Hospital Corps, and Army Service Corps, *vice* Surgeon-Major Waghorn; Surgeon-Major T. Hession to take medical charge of officers, women, and children, South Camp, *vice* Surgeon Connolly; and Surgeon Crofts to take medical charge of the troops of the 1st Infantry Brigade, *vice* Surgeon-Major Macrobin.

THE TRANSVAAL WAR.

A strong reinforcement of medical officers has been warned for service at the Cape, and the following are under orders to embark at Portsmouth with the troops in the transports *Queen*, *Hankow*, and *Ararat*. Brigade-Surgeon Sampson Roch, Surgeon-Majors David Lealie, W. P. Smith, J. Leask, Scanlan, Heather, Malley, A. Thompson, L. H. Giraud, with Surgeons Cross, Drury, Brown and Powell. A detachment of the Army Hospital Corps, numbering sixty-three non-commissioned officers and men with two officers, Lieutenants of Orderlies, Philips and Strange, will also proceed in one of these transports. The men will be completely equipped and will be armed with revolvers. Six ambulance waggons, sixty medical comfort boxes, containing brandy, port wine, essence of beef, arrowroot, preserved milk, mustard, &c., and lightly packed as to be readily carried on a mule or ox, have been forwarded by mail steamer to Durban, the port of disembarkation. The transports will take out additional quantities of chloroform, medicines, medical and surgical instruments, and material, field panniers, field companions, medical comforts, and disinfectants, for the use of the troops of the expedition.

BOMBAY MEDICAL RETIRING FUND.—It is announced from the India Office that the following is the allotment of annuities for 1881:—£252 to Surgeon-General J. R. Miller, M.D.; £210 to Surgeon-Major F. W. Harris; £210 to Deputy Surgeon-General R. G. Lord, M.D.; £168 to Surgeon-General W. G. Hunter, M.D.; £168 to Deputy Surgeon-General F. G. Joynt, M.D.; £168 to Surgeon-Major W. E. Wood.

ADMIRALTY.—Surgeon W. H. Colahan, M.D., has been promoted to the rank of Staff Surgeon in Her Majesty's Fleet, with seniority of Dec. 28th, 1880. The following appointments have been made:—Staff Surgeon Septimus Sexton to the *Iron Duke*, additional, for service in the *Magpie* when recommissioned; Surgeon J. A. M'Munn, M.B., to the *Iron Duke*, additional, for disposal; Surgeon James B. Armstrong, to the *Fly*, when recommissioned; Surgeon William J. B. Bookey, to the *Foxhound*, when recommissioned; and Surgeon James B. Clibborn, to the *Vigilant*, when recommissioned.

PHARMACOLOGY AND THERAPEUTICS.

TANNIN.

LEWIN has found that tannin ceases to coagulate albumen and fibrin if it be treated with an alkali until the mixture has a slightly alkaline reaction. This alkaline tannate is readily decomposed, but it cannot be obtained in a crystalline form. Although the compound does not coagulate albumen, it produces in the mouth the characteristic astringent sensation. Tannin will precipitate pepsin, and coagulate peptones, and hence it has been supposed to interfere with the process of digestion. But, according to Lewin, this conclusion is erroneous, for such precipitated peptone is readily soluble in a little hydrochloric acid, and the presence of this acid is sufficient to prevent such coagulation from taking place. In some experiments in artificial digestion, he found that the presence of tannin did not in the least interfere with the digestion of albumen and fibrin by pepsin and hydrochloric acid; peptones were formed just as if the tannin had not been present. A solution of tannin being added, drop by drop, to blood or lymph, a permanent coagulation of the albumen did not take place until the alkalinity of the blood was neutralised. This is explained by the fact that the tannate of albumen is soluble in alkaline carbonate, and is not precipitated as long as the alkaline carbonate is present. The antiseptic action of tannin was long doubted because fungi grow in its solution. This is, however, the case with many other agents which retard decomposition; and the antiseptic influence of tannin has been proved by experiments, which are confirmed by Lewin. It not only prevents decomposition of organic substances, but will arrest the growth of the yeast-plant. An investigation into the action of tannin on living muscles seems to demonstrate that the muscle becomes less extensible, but considerably more elastic, so that, when the extension is over, the muscle regains its original length more nearly than in health. It is a similar condition to that which is met with during rigor mortis. Temporary arrest of the supply of oxygen has a similar effect on a muscle. Lewin conjectures, therefore, that the tannin produces its effect by transforming the alkali of the blood and lymph into the soluble tannin compound, which tends to abstract oxygen from the tissues, and to produce the local manifestations of anoxæmia. It is this influence, he suggests, that determines the contraction of vessels under its influence, and has led to its general employment as a styptic. He has found that after the injection of a solution of tannin beneath the skin of a frog's leg the muscles become pale and firm, just as if frozen, and their larger vessels are almost empty, although the chief arteries of the limb are well filled.

INHALATIONS OF NITROGEN IN LUNG DISEASE.

Inhalations of nitrogen have been employed by Kohlschütter as a means of hastening absorption within the lungs, according to the suggestions of Steinbruck and Treutler. Air containing 90 per cent. of nitrogen was inhaled daily for half an hour, and an increase up to 96 per cent. was borne without inconvenience. Under this treatment defective resonance due to chronic infiltration of the parenchyma of the lung or old pleuritic exudations quickly disappeared. In many cases the amount of cough and expectoration was increased, in consequence, it is supposed, of liquefaction of the exudations. There was usually a distinct elevation of temperature, sometimes reaching 104° F., and accompanied with other evidence of pyrexia. In some of the cases the temperature began to rise soon after each inhalation, but gradually became less after successive inhalations, a tolerance being established. In other cases there was a continuous elevation of temperature, of moderate degree, which only ceased on the discontinuance of the inhalations, and in some patients, in spite of the cessation of the treatment, passed on into the hectic of the phthisical, accompanied by signs of rapid breaking down of the lung, the formation of cavities, and the progress of the disease. Besides this effect, somnolence was observed during the treatment, and an inclination to sweat, especially at night, apparently in connexion with the pyrexia. Kohlschütter explains these effects as the result, first, of the deep inhalations taken by the patients during the treatment, and, secondly, by the changed composition of the air in the lungs assisting in the destruction of the elements of exudation. He recommends further experiments in lung disease, but only in cases in which there is no breaking down of the lung tissue or hectic fever, and points out that the method of treatment requires careful watching, since it is clearly powerful for evil as well as for good.

POISONING BY CARBONATE OF BARYTA.

A girl, twenty-eight years of age, pregnant, died under the care of Professor Seidel at Jena with symptoms indicating the action of an irritant poison—repeated attacks of vomiting, abdominal pain, diarrhœa, and collapse, with, towards the last, difficulty in swallowing and breathing. Death occurred about thirty-six hours after the onset of the symptoms. After death the stomach was found to contain a moderate quantity of reddish-brown liquid, and in both stomach and duodenum there were submucous ecchymoses, and on the mucous membrane were numerous minute hard white grains. The liver presented fatty degeneration; the other organs were normal. Arsenical poisoning was first suspected, but a packet of white powder, labeled "poison," was discovered, and recognised by a chemist as containing carbonate of baryta, sold by him for the destruction of rats. The statement was verified by chemical analysis, which also showed the identity of the powder with the white grains found in the stomach. Poisoning with the salts of barium is very rare, and M. Seidel has found only eight cases recorded in medical literature. All the salts of barium are poisonous, with the exception of the sulphate and fluo-silicate. The carbonate has been regarded as innocuous, but is no doubt converted in the stomach into the poisonous chloride, and, as this case shows, is as toxic as the other salts. The similarity of the symptoms with those of poisoning by arsenic is a point of considerable interest.

BELLADONNA POISONING TREATED WITH CHLORAL.

Atropin has been successfully employed to antagonise the effects of chloral in poisoning by the latter drug. This fact suggested to Dr. Trocquart, of Bordeaux, that chloral might be equally useful in poisoning by belladonna. A chemist was troubled with tinnitus aurium, and was advised to try belladonna for its relief. He took a handful of leaves, and infused them in a small quantity of boiling water, and drank the infusion. Half an hour later he was seized with gastric pain, excitement, and giddiness. Tartar emetic was administered, which caused some vomiting. Three hours later he was wildly delirious, shrieking out, and was restrained with difficulty by four persons. His face was flushed, covered with sweat, and his pupils were widely dilated. Each attack of delirium lasted for four or five minutes, and between the attacks were intervals of utter prostration. A dose of chloral was ordered, but could not be given on account of the patient's violence. A few hours later, however, five grammes of chloral were administered in an injection. The violent paroxysms quickly subsided. Whenever there was any indication of a return another dose of chloral was administered. The patient passed a quiet night, and woke up next morning with merely considerable muscular fatigue.

THE ANTAGONISMS OF ACONITIA.

An important series of investigations by Dr. Ringer and his assistants into the action and antagonistic actions of aconitia, atropia, and pilocarpin on the frog's heart have led to the following conclusions. Aconitia slows and weakens the heart and incoördinates the ventricular contraction. The incoördination precedes the weakening, and sometimes the contractions, though slow and incoördinate, continue strong until the heart stops. The effect on the ventricles is far more rapid and powerful than on the auricles, and the whole effect on the heart is less powerful than that on the cerebro-spinal centres, for after complete paralysis the heart often continues to beat well for a considerable time, and the general depression which follows a poisonous dose of aconitia is chiefly due to its action on the central nervous system. Atropia antagonises the action of aconitia on the heart, it restores contractions in a heart which has been arrested by aconitia, and strengthens, accelerates, and coördinates the heart simply weakened, slowed, and incoördinated by aconitia. There is no antagonism between aconitia and muscarin, or pilocarpin. Atropia, however, antagonises the combined effects of aconitia and muscarin, and of aconitia and pilocarpin. Dr. Ringer agrees with the opinion that antagonisms are due to chemical displacement, and believes that atropia antagonises muscarin, pilocarpin, and aconitia

because it has a stronger affinity for the muscular and nervous structures of the heart than these substances, and displaces them, replacing their effect by its own.

THE ACTION OF SQUILLS ON THE HEART.

The action of squills upon the heart has been found by Röhmann to resemble that of digitalis. After the injection of a fresh watery infusion, or of an extract, into a vein of a curarised dog, the pulse was retarded, and the blood-pressure rose. Afterwards, the pulse increased in frequency, while the blood-pressure remained high, or fell. When the stage of accelerated pulse and of lowered blood-pressure had set in, a fresh injection again slowed the pulse, without any corresponding elevation of the blood-pressure. These effects occurred after division of the vagi, but if the vagi were divided after the retardation of the pulse, and the blood-pressure had risen, no further action could be obtained by further injections. Röhmann assumes that the increase in the blood-pressure is the result of an irritation of the vaso-motor centre, while the changes in the pulse rate are due to an initial stimulation, and subsequent paralysis of the centre of the vagus, the intra-cardiac terminations of this nerve remaining for a time excitable. The pulse tracing, however, compared with that of digitalis, shows much broader and flatter curves. It is probable also that squills has an action on the muscular tissue of the heart, similar to that of digitalis. These experiments show that there may be some ground for the objection, which practitioners have occasionally expressed, against the use of squills in the acute bronchitis of children.

BENZOIC ACID.

Schulte has found that the introduction of benzoic acid into the stomach of warm- and cold-blooded animals always causes irritation of the mucous membrane, extravasation, and hæmorrhagic erosion, and that similar irritation is sometimes observed even when benzoic acid or its salts have been introduced by injection under the skin, or into a vein. In the latter case the pulse and respiration are at first accelerated, and afterwards retarded. The blood-pressure is not influenced by slight injections, but is lowered by stronger ones, and the phenomena are independent of the vagus nerve. Whenever the dose amounts to more than two-thousandths of the body weight of the animal, toxic symptoms occur, followed by death. Salkowski has pointed out that when benzoic acid is given the urine commonly contains a substance which is capable of reducing sugar. This body is not soluble in ether, but it is soluble in alcoholised ether and acetic ether. It is very slightly soluble in water, and thus is distinguished from both benzoic acid and hippuric acid. The salt it forms with barium is insoluble in water, and contains both nitrogen and chlorine. Schulte has found that the appearance of this substance in the urine corresponds in time with the appearance of toxic symptoms. In the therapeutic use of benzoic acid and benzoate of soda for diphtheria, acute and subacute articular rheumatism, erysipelas, typhus, diabetes, nephritis, interstitial phthisis, peritonitis, &c., the reducing substance was never found in the urine after a small subcutaneous injection, but was found when a larger injection was given. The salt was found distinctly useful only in acute articular rheumatism and diphtheria.

THE LOAN EXHIBITION AT THE ROYAL ACADEMY.

AT Burlington House there is just now a collection of works by the Old Masters and by the deceased masters of the British school, as well as a collection of drawings by John Flaxman, R.A., a large proportion of which is contributed by University College. Although this is the twelfth year in which the council have applied to the owners of the art treasures of England for the loan of their works, so far from the present exhibition betraying any signs that the sources of supply are being exhausted, one cannot help feeling, on the contrary, that there has never been brought together such a splendid collection as that which the public has now the privilege of examining. The drawings of Flaxman are especially interesting. Some day the English will awake to the knowledge of the extraordinary power of this artist. At the present time he is more valued abroad than at home. Amongst the paintings are works by Raphael, Rembrandt, Teniers, Van Dyck, Velasquez, Paolo Veronese, Wouverman, Paul Potter, Sir Joshua Reynolds, Wilkie, Lawrence, Gainsborough, and numerous others of like renown. The exhibition is especially remarkable for the fine specimens of George Morland, some of whose works, as here exhibited, will surprise those who have been accustomed to associate him almost exclusively with drawings of Hodge, with a pitch-fork at hand, looking over a wooden fence at a huge pig. The pleasure of a visit to this exhibition is not, however, without some alloy; for when the May exhibitions are brought to mind comparisons are suggested which cannot fail to make the thoughtful wonder whether the large prices commanded by the painter of to-day have a really beneficial effect upon the progress of art in this country.

THERAPEUTIC NOTES.

(*Communicated by* DAVID PAGE, M.D., M.R.C.P.)

IN the treatment of Tetanus and Trismus, Spoerer has successfully employed hot-water compresses. He dips a large enough piece of coarse flannel in water of a temperature which can just be borne by the hand (50° to 55° C.), and applies the compress to the occiput and along the spine.

Quebracho has been used by J. R. Berkart as an efficient palliative in the dyspnœa of emphysema, atheroma, and fatty degeneration of the heart. Relief followed within three minutes after the exhibition of a teaspoonful of the fluid extract.

In purulent inflammations of the urinary tract, French has found kava-kava an efficient remedy, and has also used it with success in four cases of cystitis. In urethritis the formula he employed was, sixty grammes of the fluid extract of eucalyptus globulus, twenty grammes of the fluid extract of kava-kava, two grammes of benzoic acid, and twelve grammes of powdered borax; three teaspoonfuls daily. According to the statements of Dupuy, kava-kava is a sialogogue, a bitter; to a slight extent a nervine stimulant, and a blennostatic. In acute urethritis and vaginitis, the resin obtained from kava-kava was likewise proved satisfactory in allaying pain and diminishing secretion.

Kendal.

Correspondence.

"Audi alteram partem."

MEDICAL EDUCATION.

To the Editor of THE LANCET.

SIR,—An experience of nearly eight years in private tutorial work, and of four years as medical tutor at the Westminster Hospital, is my justification for adding another to the numerous letters which have appeared in your columns on the subject of Medical Education.

Mr. Bruce Clarke has pointed out a great difficulty in the way of a sound medical education—namely, the imperfect manner in which the preliminary studies of aspirants to the profession has been carried on. An attempt to solve this difficulty has recently been made by the College of Physicians of London. Its scheme encourages students to master botany, materia medica, chemistry, and osteology before entering a hospital; so that those who have passed this examination prior to beginning their hospital career will not only have four clear years in which to study anatomy, physiology, surgery, medicine, midwifery, &c., but they will also have acquired a certain amount of scientific training, and the power of working independently, the want of which is a great drawback to youths entering fresh from school.

Unfortunately the recent examiners at the College of Physicians still keep in the old groove, as in the first paper under the new plan I see that the pharmacopœial process for obtaining morphia is asked. I cordially agree with Mr. Butlin in his suggestion, that the amount of ground to be traversed should be limited. Among the subjects to be excluded should be the preparation of the alkaloids, as I know from experience that this is purely a matter of cram,

usually being left to two or three days before the examination. I am glad to see that only a slight acquaintance with botany is required by this scheme.

In conclusion, if I might be allowed to sum up, I would say that the reforms in medical education which seem to me to be the most imperative are, first, an improvement in the preliminary studies—i.e., that students should be compelled to pass in botany, chemistry, and materia medica before entering at a hospital. It would follow as a corollary that attendance at lectures on these subjects would not be required of a student after he had entered, thus affording an increased amount of time for more important work. Second, that Mr. Christopher Heath's suggestion of two years' interval between the passing of the first and second examination at the College of Surgeons should be strictly enforced.

I am, Sir, your obedient servant,

F. DE HAVILLAND HALL,

Assistant Physician to the Westminster Hospital.

e-street, Dec. 23rd, 1880.

To the Editor of THE LANCET.

SIR,—As the question of medical education is exciting much interest, of which the multitude of letters in your columns is evidence, I would venture to offer a few remarks on the subject, as one who has recently passed through the ordeal. You have heard the opinions of the teachers and examiners, the men attached to schools and colleges, that it is better to have a longer hospital course, and that this should be preceded by a good scientific examination. Each of them favours his own subject and wishes more attention was given to it; others, men of good general education, wish to see a preliminary examination in their speciality, more thorough and effective. The general practitioners are all for what they call the *practical* aspect of the question: a man should know how to dress this wound or that sore, and use such or such an instrument, besides having a practical personal acquaintance with pharmacy and dispensing, and as the one source effective in acquiring such working experience and knowledge, they advocate pupilage for the first two years to a general practitioner. There is reason in all these remedies, but the difficulty is to select a workable scheme, which will not be too long or too expensive, and which will yet give us a better educated class of men than the present general practitioners. The following seems to me to contain, at any rate, some of these requisites.

General education to continue to the age of seventeen, when the candidate can present himself for an examination, consisting of two parts, (*a*) general and (*b*) scientific, which may be passed simultaneously or at different times. This would be the preliminary examination, and satisfactory certificates in both parts a necessity for admission to the register before commencing study as medical students. The subjects of general education should be—1. English (much more than is usually demanded). 2. Latin, translations from one or two of the ordinary school authors, and grammar. 3. One modern language at least. 4. Mathematics, arithmetic, algebra, and Euclid. The science should comprise—1. Chemistry. 2. Natural philosophy. 3. Botany. 4. Zoology. Only an elementary knowledge of each would be required, and its range should be distinctly scheduled; but all should be supplemented by *viva voce* and practical work when possible. Additional subjects might be permitted or more advanced papers on the above.

After this preliminary examination, which would very much resemble the matriculation and preliminary scientific of London, or previous examination and 1st M.B. of Cambridge, combined and made easy enough to suit the general capacity of those who enter the profession, the student might register and immediately begin to study anatomy and physiology at some medical school. Now, I wish to make a protest against the advice so often given to the young student, "Go into the wards, and see all you can in the out-patients' department," from the first day he enters the hospital. It is undoubtedly the thing he ought *not* to do; let him devote his whole time and energy to his anatomy and physiology for the first year or eighteen months, only going into the out-patient rooms say twice a week for an hour each time, and round the wards for the same limited time on two or three other days. Why the examining bodies require certificates of attendance on courses of lectures I do not see. Why can they not be content to examine a man and by the results refer him back or allow him to proceed in his studies, without wanting evidence of how and when he gained his knowledge? By insisting on these certificates they hamper a student in the whole of his course, confuse him with a multiplicity of subjects, and regulate the time he is to spend over them, so as to make him waste it to the utmost. They should remember they see *only* examining bodies. The General Medical Council should regulate the studies as to amount and order in the examinations.

We have seen that a student of diligence and well-directed study might thus pass his examination in anatomy and physiology in one year, or a year and a half at most. To attain this end the examining bodies must consent to diminish the present time required in the dissecting room by a year. We have now three years, or two and a half, left to devote entirely to the study of medicine, surgery, midwifery, &c., and it is in this way that I would propose to provide some, at any rate, of the extra time for study demanded by Mr. Savory:—The final examination should consist of two parts—(*a*) medicine, including pharmacy and therapeutics, hygiene, medical jurisprudence, and midwifery; and (*b*) surgery, including ophthalmic, aural, and other branches. The subject of pharmacy and therapeutics is usually lectured to students in their first year; but this, I maintain, is decidedly a waste of time: the application of, and examination in, these subjects is at the end of the course, and so ought the teaching to be. The student might be allowed to present himself for the medical and surgical divisions of the examination at the same or at different times.

Now, here is the proper time and place for the apprenticeship of pupilage which general practitioners insist so much on, or for making use of the vast field, at present uncultivated, which our provincial hospitals, unions, and such places present. No one can deny the advantage, or absolute necessity, for one in our profession to have had the semi-responsible charge of patients, such as our hospital house-physicians and surgeons have, if he is to be successful in assuming the entire care of them in private practice. The London University has recognised this fully, and requires all candidates for its degree to produce evidence of having held such a position for six months; and there is no reason why the same wise regulation should not extend to every member of our profession before he receives permission to practise on his own account. The student, after passing his examinations in surgery and medicine, might receive certificates to that effect, and be obliged to then hold an appointment for six months as house-physician or house-surgeon to some public institution, or as qualified assistant to some general practitioner before he is handed his diplomas and allowed to register. The general practitioner should have a large practice, including clubs, unions, or mines, or other appointments affording an extensive field for gaining experience. The student being qualified might justly get his board and lodging, and perhaps some emolument; and while thus gaining valuable and necessary experience, his course of study would be lengthened, to the satisfaction of Mr. Savory, I hope, without any or little additional expense. Whether the provincial hospitals and other institutions would help in such an arrangement, I do not know; but Dr. Strange, in your issue of the 18th December, does not seem to apprehend any difficulty from them. Such a curriculum would, I think, satisfy the several demands of students, teachers, and general practitioners for reform in our present system. It may be much improved by others, but it is the best I have been able to elaborate after much thought; and as a suggestion I offer it to the consideration of the profession now, when the subject of remodelling medical education is so prominently brought forward.

Apologising for the length of this communication,

I am, Sir, yours, &c.,

H. HOWARD MURPHY, M.D. Cantab.

Twickenham, Jan. 1881.

To the Editor of THE LANCET.

SIR,—Having read with great interest your own valuable comments upon this subject, and also the wise and important suggestions of Mr. Savory, Mr. Heath, Dr. Strange, and others, and having had many years' experience amongst students as a collegiate lecturer and private tutor, may I, as the result of all of it, make the single suggestion, that the addition of one single year to the period of study, making

five years instead of four years, would remove every difficulty with all the reasonably industrious students, and enable them to comply, moreover, with necessary requirements, and secure the acknowledged benefits suggested by one or other of your correspondents? What are the objects which should and must be obtained? These are in the main three.

1. *More adequate time for the student's work.*—This would be secured, for the extra year would double the period for some of his subjects, and enable him to do his work well, instead of too often most indifferently, for want of time.

2. *A division of subjects and examinations.*—This could be more efficiently secured, both being most desirable, and a first examination in all his scientific subjects should include his anatomical and physiological, at the end of the third year at latest. His two winters' anatomy, without which no student can learn the subject, would also be easily secured. It would also enable him to devote at least two full years afterwards exclusively to hospital work and practical subjects.

3. *Some time spent with a practitioner.*—This object would be most easily secured by residence being made compulsory with a practitioner during his first two years, a practice easily complied with and most beneficial. The only real objection to the seven years of Mr. Savory, I think, is the considerable extra outlay which would be required by the student. Would it not be well to try a less onerous addition to the period, which would, I believe, suffice and act admirably? I have very long felt that all the subjects which it is desirable for a student to study at a college or school should be examined upon; for too often, without this, mere attendance in classes for the purpose of completing schedules only leads to a complete waste of time in a good many cases. The examination might be lighter or more difficult, in accord with the aim of the student, and also in proportion to the direct value of the subject to medicine.

I am, &c.,

WILLIAM HINDS, M.D., &c.

Easy-row, Birmingham, Dec. 19th, 1880.

RETARDED SIGNS IN PNEUMONIA.

To the Editor of THE LANCET.

SIR,—When writing my paper on Retarded Signs in Pneumonia, it was not my wish or intention to lay claim to making any fresh or original observations upon the physical signs of that disease, but simply to call attention to the greater frequency of late discoverable signs. The following paragraphs, which are extracted from my paper, I think, will show this:—"I believe that physical signs, such as dulness on percussion, bronchial breathing, and bronchophony, occur later in the course of the disease than is usually supposed, or perhaps it would be more correct to say, that there is a larger percentage of cases with lately discoverable signs than our reading or teaching has hitherto led us to think." Again, "If this dulness, bronchial breathing, and bronchophony are frequently lately noticed—*for all authors admit these signs are occasionally either overlooked or lately discovered*—then it becomes necessary to diagnose the disease by symptoms instead of by signs."

I have read several articles on pneumonia, and also Dr. Sturges's book upon the clinical history of that disease, and failed to find that prominence given to the above cases which they appear to deserve. The question whether these late signs are really due to the disease having commenced in a central situation in all cases, I think, is doubtful, but as far as my own go, I believe the central origin of the disease fully explains them, for the crisis generally appeared a day or so after the signs were discovered.

In my last case, that of a girl aged seven years, the dulness was detected on the fifth and the crisis followed on the sixth day of the disease.

In the cases mentioned by Dr. Sturges in his letter to you, in which the physical signs commenced about the sixth day, the crisis not occurring for six or seven days later, might not these be the cases which have a constitutional origin, as suggested by Dr. Yeo and Dr. Goodhart during the discussion of the paper?

I am, Sir, yours obediently,

Folkestone, Jan. 3rd 1881. W. JOSEPH TYSON.

"LISTERIAN" OVARIOTOMY.

To the Editor of THE LANCET.

SIR,—As the discussion at the Medico-Chirurgical Society, last Tuesday, shows pretty strongly that there is a considerable difference of opinion as to the relative merits of antiseptic or non-antiseptic ovariotomy, I may be permitted to record my own most recent experience of the operation. I have had fifty operations during a period of about two and a half years, and in these I do not include other cases of abdominal section, such as simple exploratory incision, removal of myoma, or incomplete cases, nephrotomy for pyosalpinx, &c., of which there were twenty-nine in the same period. I hope in due course to be enabled to publish a complete list of all such from the commencement of my practice.

Of the 50 ovariotomies only 1 patient died. This series includes 34 for ovarian tumour (ovariotomy proper) and 16 for oöphorectomy. The results were 21 successive recoveries; then 1 death; then 28 successive recoveries. The death occurred in the case of removal of a parovarian cyst, forty-four hours after operation; it was very sudden, with symptoms of coma. The cases were taken without selection, and were of the average difficulty and danger. Two of them were, I consider, much above the average in this respect—e.g., the case of J. B——, aged thirty-nine, a large left multilocular cyst, easily removed. Twelve hours afterwards, when I was sent for, I found her in extreme collapse; the abdomen was reopened under spray, and the ligature was found to have slipped, the pedicle was tied again, and quite two pints of clotted and fluid blood were scooped out of the abdomen and pelvis. After a most tedious "toilette du péritoine," the wound was again closed, and the patient did well. In the second case, E. R——, aged thirty-nine, a tedious and difficult operation, I placed a drainage-tube, as the tumour had been so adherent as to require partial enucleation. Six hours after the operation the sister at the hospital telephoned to me that they missed a pair of torsion forceps. On seeing the patient at once, I found her fairly well, though in pain, and I recommended a further search. Next morning, exactly twenty-four hours after the operation, she was in intense pain, anxious, quick pulse, though the temperature was not much raised; but as the forceps could not be found, I concluded they were in the patient's abdomen, and, under the spray, I cut the uppermost stitch, and made from it a fresh opening into the abdomen, above the umbilicus. After a short search I found the forceps, with lymph upon them, lying down against the left side of the spine. I made the fresh opening so as not to interfere with the drainage-tube or to allow its contents to enter the abdomen. The patient made a perfect recovery.

I believe all the operations were performed strictly antiseptically. The spray solution, in most cases, was 1 in 20—occasionally 1 in 30—making the spray itself about 1 in 40, or 1 in 60. The wounds were dressed, in about the first half of the number, with gauze, and since then with the carbolised absorbent cotton-wool introduced by Mr. Gamgee. I have never pretended to conduct the treatment, after operation, strictly antiseptically; for I have looked upon it as of the very first importance to conduct the operation itself with the strictest antiseptic care until the peritoneal wound has closed, which is well known to take place very quickly; and, after that, that the abdominal wound may be treated on ordinary principles as an incised wound, which plan will not influence the result, and is a matter of a very short period, more or less, in the ultimate recovery of the patient. Of course, many of the cases healed without any pus; but I have been convinced that others have not healed quite as quickly as those of Mr. Tait, who has not regarded antiseptic principles as of the same importance as myself. Of this I have never been anxious, so long as I was satisfied that the peritoneal cavity had been exposed to only a carbolised atmosphere; for it is so well known how easily this cavity is shut off when the edges of the wound are brought together, even before the sutures are tied, making it sometimes no easy matter to insert one's finger, as, for instance, to extract the flat sponge.

I have usually ascribed the more tardy healing of the wound, when such did occur, to the action of the dressing, rather than of the spray, as my carbolised wool was made

without measuring the acid, and was known to be more strongly impregnated at one time than another.

In none of the cases was there an excessively high temperature, or a frequent pulse observed, which could possibly be considered as due to carbolic poisoning.

In eighteen cases the clamp was used, and in thirty-two the ligature; in one of the latter a drainage-tube was also inserted. In the patient who died the pedicle was tied. One patient was in the fourth month of pregnancy, and was afterwards confined at term of a living daughter.

I am, Sir, yours truly,

Birmingham, Dec. 16th, 1880. THOMAS SAVAGE.

P.S.—Since writing the above, the patient upon whom I last operated died four days ago, so that my statistics should be stated as 2 deaths in 50 operations, and not 1 in 50, as stated above. The death was due to one of those unforeseen and, as far as can be told at present, unpreventable causes—viz., tetanus, which will always be liable to step in and raise the mortality of ovariotomy, apart from the question of antiseptics or non-antiseptics. The patient was perfectly well up to the ninth day; wound healed without pus; sutures removed, and looking forward to leaving the hospital. She first complained of a little "cold" from a window draught, and from that symptoms of tetanus developed, which terminated her life in twenty-four hours. At the post-mortem made by Dr. Saundby there was no appreciable cause for death. The abdomen was quite healthy; a piece of small intestine was adherent to the stump, and there was not a trace of serum or pus to be seen in the pelvis. I am now sorry that I did not wait a little longer before sending the record of my last fifty cases; but I was anxious to make the contribution as soon as possible after the Medico-Chirurgical Society's discussion.

December 27th, 1880.

NEW FORM OF GAG.

To the Editor of THE LANCET.

SIR,—I would venture to recommend a somewhat novel form of gag, which will be found useful in operations for the removal of tonsils, and in some cases of staphyloraphy. The instrument is essentially Mr. Rose's double-ended modi-

fication of Mr. Coleman's gag, to which Messrs. Mayer and Meltzer have adapted an ingenious sliding-ring-catch, to keep it open. To this a tongue-plate is now added, so that the gag answers almost all the purposes of the more expensive instrument usually employed in operations on the palate. The accompanying illustration will probably save the necessity of a further description.

I am, Sir, yours obediently,

Stratford-place, Dec. 21st, 1880. THOMAS SMITH.

ON CHIAN TURPENTINE AND PROF. CLAY.

To the Editor of THE LANCET.

SIR,—I deeply regret that the remarks with which I prefaced the report of my cases, and which were intended to convince Prof. Clay of the readiness with which we gave the Chian turpentine a fair trial at the Middlesex Hospital, and the satisfaction with which we should have welcomed any measure of success from it, have failed in their object, and have apparently left room for him to suppose we have "a prejudice against the Chian turpentine treatment not justified by the cases recorded." I would also mention for his information that the resolution of the Medical Committee was passed not owing to the results of my experience alone, but to those of my colleagues as well.

Although Prof. Clay says in his letter of last week, "I have never yet affirmed Chian turpentine to be a positive cure for cancer," I think it very pardonable if he has been misunderstood on this point; for he has made statements which to the ordinary mind distinctly imply the contrary. For instance, in his first communication (THE LANCET, March 27th, 1880) he has written, "Judging by my experience it is no figurative expression to say that it acts as a direct poison upon the growth, probably causing its ultimate death..... In the early stages of cancer it may be affirmed that *an undoubted cure may take place speedily*,.....and experience justifies the expectation that under such circumstances a recurrence of the disease will not follow." He has recorded a case (Case 2) in which the os and cervix uteri "were enlarged from carcinoma to the size of a hen's egg. The os was dilated and the cavity of the cervix was filled with epithelial growth which bled freely"; and the result of treatment is described thus: "The case was a most remarkable one. The turpentine acted upon the growth with great vigour, literally melting it away in the brief period of four or five weeks," and it is added, "*She had continued quite well.*" In his second article (THE LANCET, October 2nd, 1880) Professor Clay says, that the cases previously reported by him "are unique of their kind, for, as far as I know, they are the only instances on record of cancer being *cured* solely by the administration of an internal remedy. I feel justified, therefore, in stating that uterine cancer at least may be removed by the use of Chian turpentine." And further on he writes: "It is possible, therefore, to formulate a line of treatment which shall be successful in cancers of the uterus." In short, his writings teem with phrases which imply, when they do not absolutely state, the curative agency of the treatment he advocates.

Nor do his published statements permit him to object, consistently, to my cases on the ground of their severity, and to say, "It was never contemplated by me that the remedy should be used in the treatment of cases verging on death, as five of the uterine cases reported by Mr. Morris evidently were." On referring to Prof. Clay's first case we find him stating, "The patient evidently had *not a long time to live*. The uterus was so extensively destroyed by the cancerous ulceration that its cavity readily admitted three fingers." The case was so desperate that it seemed to Prof. Clay justifiable to try the Chian turpentine "even if the remedy should produce unfavourable symptoms." Yet on the twelfth day, as he informs us, "the os was quite contracted and would now scarcely admit the finger;" in the twelfth week the parts were cicatrising, the patient's health good, and she could walk a mile or two easily. In his second paper Prof. Clay says: "It is advisable not to be too precipitate in rejecting a case of uterine cancer on the ground of its being too far advanced for treatment," and he then goes on to state how that the patient, who is said to have been told at the Middlesex Hospital "that her case was incurable, and that *she had not long to live*," was so much improved in nine weeks that she was about to return to London, "with every prospect of soon being cured." In the face of these statements, it is perfectly amazing that Prof. Clay should object to any case short of one actually moribund.

But it is a distinct, although I am willing to think an unintentional, misrepresentation of my cases for Professor Clay to say respecting them: "Nor did I ever suggest or imagine that Chian turpentine would build up a new uterus, or repair a cancerous fistula of the intestines, or patch up a great cavity into the bladder, or restore a large recto-vaginal fistula with the fundus of the uterus extensively destroyed. Yet several of the cases described by Mr. Morris were of this character." These were the conditions brought about by the ravages of the disease during the administration of Chian turpentine over periods varying in the several cases from seven weeks to nearly seven months, and found at the post-mortem examinations; *not* the conditions at the time the treatment was commenced. Moreover, some of the patients who have been taking the medicine for months are still going about, although getting gradually worse.

Indeed, no one who will take the trouble to read my cases, as well as Professor Clay's, can arrive at any other conclusion than that even in the worst of my cases the cancer was in a less advanced stage when the turpentine was commenced than in those cases of Professor Clay in which it obtained such brilliant and merciful results.

If, Sir, it were not for the encroachment on your space, I would place brief abstracts of Professor Clay's cases, and a corresponding number of the most severe of my own, side by side, for immediate comparison; and it is with reluctance that I forego doing so.

I will, however, conclude by saying that if the twelve cases which I have published are not thought by the profession (for I fear I cannot hope to satisfy Professor Clay) to be sufficient, or sufficiently conclusive to show the utter uselessness of Chian turpentine in the treatment of cancer, I am prepared with other facts and cases in support of my opinion that "there is not a single symptom over which the drug seems to exercise even frequently, not to say constantly, an influence."

I remain, Sir, your obedient servant,

Mansfield-street, Dec. 13th, 1880. HENRY MORRIS.

SCOTLAND.

(From our own Correspondents.)

EDINBURGH.

THE past year has been rendered eventful in the Edinburgh Medical School by the managers of the Royal Infirmary suddenly abolishing the tutorial class of gynæcological instruction attached to the University wards. It is stated that the managers have under consideration the whole subject of tutorial classes, more especially those conducted by gentlemen who are not on the acting staff of the institution. The summary measure already adopted seems unsatisfactory to the mass of the teachers, and is decidedly unpopular with the students, who are well aware of the importance of such practical work, and who highly appreciate the benefits there obtained. In his inaugural address at the beginning of the session the President of the Royal Medical Society drew attention to the value of practical classes and ward work, and pointed out that all would gain by an extension and improvement in the tutorial system. One of the surgeons has been giving ether a trial since the beginning of the session; an inhaler and anhydrous ether are used just as employed by Dr. Thomas Keith.

On New Year's night the usual melancholy results of this "much too festive season" were apparent in the continuous stream of accidents that kept pouring into the hospital waiting-room. Among these were a compound fracture of the patella, a railway smash of the arm, necessitating amputation of the arm at the shoulder-joint, besides many simple fractures and cut heads. Most of this was due, more or less, to drink. A few cases of alcohol poisoning are reported from Glasgow.

At the annual meeting of the Scottish Society for the Prevention of Cruelty to Animals, held on Dec. 28th in Edinburgh, the Secretary stated that the cases reported by the officers of the Society had somewhat increased, the number for the past year being 311. The Chairman, Mr. Josiah Livingston, referring to the practice of vivisection, said they could do nothing to prevent this system of cruelty. Physicians and surgeons were licensed for the purpose of giving demonstrations, and they had no means of bringing those persons under the operation of the law. Another gentleman stated his belief that vivisection was certainly the most horrid species of cruelty to animals that could possibly exist. Councillor Sloan referred to several important discoveries in science and medicine made through the practice of vivisection, and said that the saving of a single man's life was worth more than all the cats and dogs in the town. Several ladies and gentlemen rose to their feet, and denounced Mr. Sloan's sentiments in an excited manner. When quiet had been restored, Mr. Sloan asked what a single human life was in comparison with all the cats and dogs nursed and pampered in the New Town? He was not there as an apologist for vivisection? But were researches in science and medicine to be baulked by mere sentiment? On its being stated that the question of vivisection was not before the meeting, the subject afterwards dropped.

GLASGOW.

THE medical schools of Glasgow were never in a more flourishing condition than at present. The total number of students attending the University this year is 2281, against 2220 last year, an increase of 3 per cent. In Medicine alone 557 students have entered, against 539 last year; so that, judged merely by numbers, the University has maintained and improved its position. The schools at Anderson's College and at the Royal Infirmary appear to share this prosperity. A feeling has lately been growing up, however, that it would be to the interest of both these institutions that their rivalry should cease and that their medical schools should be amalgamated; and the arguments in favour of this view are strong. This proposal has not yet taken any definite shape, and it is questionable if it can be satisfactorily carried out, considering that many of those more immediately interested would be sure to give it their hearty opposition. A fourth medical school has recently been started in Glasgow, in rooms situated at the gate of the University. Its lecturing staff consists of Dr. W. L. Reid, Mr. D. A. Knox, and Mr. D. C. M'Vail, who give instruction in obstetrics, surgery, and medicine respectively. It is still "the day of small things" with this school, but who knows what it may grow to?

Much interest is being shown in Glasgow in the movement for the erection of a hospital on the south side of the river. This scheme was, very properly, first taken up by the Glasgow Southern Medical Society two years ago, and from the amount of support which was at that time promised to it it is tolerably certain that it would long ago have been brought to a successful issue but for the unparalleled depression of trade which existed at that time, and which, perhaps, affected Glasgow more deeply than any other city in the kingdom. A few months ago the Hospital Committee of the above-named Society again began active operations, and as a result of their efforts a large provisional committee of employers of labour and other influential gentlemen has been formed, with the view of carrying on the work. The arguments adduced in the Committee's circular are such as to leave no doubt that the accommodation they ask is most urgently needed. It is scarcely credible that a district teeming with workshops and factories, having a population of over 200,000 people, largely of the working and indigent class, should be without a single hospital bed or a general public dispensary; or that patients coming from the southern suburbs and from the country towns beyond, suffering from severe accident or serious acute disease, should have to be jolted for many miles on the way to hospital, an experience which doubtless frequently makes all the difference between life and death to the sufferer. Large as the existing hospitals on the north side of the river are, they often fail, even in summer, to afford the accommodation required, and in winter their doors are besieged daily by a crowd of applicants, sometimes two hundred in number, waiting their turn for admission. The wealthy men of Glasgow are always ready to give freely for charitable and benevolent objects; they have a reputation to sustain in this matter, and it is indeed seldom that they have such a strong case presented to them. They will belie the estimate formed of them if they do not soon raise the comparatively small sum, £20,000, required to float this scheme.

The Glasgow sewage question is still unsolved. It has engaged the attention of successive town councils for a number of years, but no satisfactory conclusion has yet been come to. Meantime, the state of the river Clyde, the harbour, and the shores of the upper part of the Firth, is becoming daily worse. A short time ago the endemic prevalence of "influenza" (which in many respects resembled typhoid fever) in Helensburgh and the Gareloch district was attributed, and apparently with justice, to the deep deposit of decomposing mud and sewage brought down from Glasgow, and left on the adjacent shores. The latest suggestion as to the disposal of the city sewage comes from Dr. W. Wallace. In a paper read by him before the Philosophical Society of Glasgow he recommends the precipitation process, and considers lime the least precipitating agent obtainable at a reasonable expense. Alumina is better, but is much more costly. About forty tons of lime would be needed daily for the treatment of forty to seventy million tons of liquid sewage, at a cost of rather less than £9000 per annum. The effluent from this precipitating process, though not perfectly clear and pure, would not, under any circumstances, give rise to a nuisance. Dr. Wallace also announced that a new precipitation process, cheaper to work and giving even better results, would soon be made public.

In the recently-issued annual report of the Glasgow Western Infirmary it is announced that during the past year 12,782 out-door and 2052 in-door patients have been treated,

an increase of 1861 on the numbers of the previous year. The number of in-door patients waiting for admission *averaged*, throughout the year, 68. The large addition to the infirmary, which is being built and equipped from funds left for this purpose by the late Mr. Freeland of Nice, and which nearly doubles the accommodation of the institution, is now almost ready for occupancy; but, as shown in the report, the managers depend entirely on increased contributions from the public to enable them to maintain any increased number of patients. Each additional bed occupied will cost about £50 per annum.

A public meeting of the inhabitants of Dundee was held on 29th December, for the purpose of devising means for the establishment of a College in that town. Towards this object there has already been received a sum of £150,000, the gift mainly of Miss Baxter, of Ellangowan, and Dr. J. B. Baxter. The proposed College is for the promotion of the higher branches of education in arts and science: Classical literature, Latin and Greek, pure mathematics, natural philosophy, mental philosophy, and natural science, including chemistry, physiology, natural history, geology, and botany. It has been suggested that medicine also should be taught at the College, and that the large and admirably-conducted Infirmary of Dundee would be of great use in connexion with a medical school. It is anticipated that in time Dundee College will come to be affiliated with one or other of the Universities, and that its classes will qualify for graduation. This rather complicates matters for Scotland's oldest University, St. Andrews, which has already difficulties enough to contend with. Indeed, it has been proposed, and we believe the scheme is at present under consideration, that the Arts and Science Faculties of St. Andrews should be at once transferred to Dundee, a change which could scarcely fail to be of benefit to all concerned.

The new building in which the work of the Glasgow Maternity or Lying-in Hospital will in future be carried on has now been completed, and appears to embody all the latest improvements in hospital construction. It consists of three storeys and attics. Two whole flats are devoted to the wards and head-nurse's rooms, each flat containing eighteen beds, and giving an average of 1460 cubic feet to each patient. In the upper flat an isolation ward is provided, to be used in the event of the breaking out of any epidemic disease. The remainder of the space is taken up by the lecture-room, lecturer's retiring-room, board-room matron's, house-surgeon's, and nurses' accommodation, &c. The sanitary arrangements are as nearly as possible perfect. The lavatories, which contain baths, W.C., washhand basins, slop-sink and general sink, are fitted up with the best and most approved appliances, and are entirely disconnected from the main building, being approached through a lobby with doors at each end. The soil-pipes, traps &c., are thoroughly ventilated. The heating is by open fireplaces and low-pressure hot-water pipes carried through all the wards, lecture-room, staircase, &c. Fresh air, warmed by passing over hot-water pipes, is admitted at the level of the floor, under the windows. The vitiated air is carried off by openings in the wall close to the roof, these being connected by separate flues with a hot-air extracting chamber. The public of Glasgow have subscribed liberally towards the hospital; but we understand that the sum of £1100 is still needed to open the building on a satisfactory footing. This sum will doubtless soon be obtained for such a deserving object.

A vigorous letter from Mr. Thomas Keith appeared in the *Scotsman* of January 3rd. It should be carefully pondered by every sympathiser with anti-vivisection movements, if, indeed, such persons could be induced to give calm and dispassionate consideration to such a subject. It furnishes, also, a fresh instance of the objectionable means to which unreasoning enthusiasts often resort in endeavouring to propagate their beliefs.

THE committee appointed by the Epsom Board of Guardians, to consider the question of the salaries of the medical officers of the union, have recommended an increase in the remuneration for the work done in several of the districts, and that a fixed sum be paid annually to the medical officers for expensive medicines instead of these being charged for quarterly.

IRELAND.

(From our own Correspondent.)

DR. CHRISTOPHER FLEMING, an Ex-President of the Royal College of Surgeons in Ireland, and formerly a member of the Surgical Court of Examiners, and surgeon to the Richmond Hospital, died last week in his 81st year.

The Lord Mayor of Dublin, who was installed on the 1st inst., referred to the large expenditure (£22,000) during the past year upon the city sewers, and when the works now in progress (estimated to cost £9000) are finished, he believed the sewerage of Dublin would be in a very perfect condition, at least as perfect as it could be said to be until the larger scheme of main drainage has been carried out. Another satisfactory work had been performed in the purchase of the Coombe area. The district referred to had been a nest of tumbledown, ruined, and filthy tenements, the focus and seat of disease and dirt. It has now been cleared and handed over to the Artisans' Dwellings Company, who have commenced the erection upon it of a large number of suitable and commodious dwellings for artisans and labourers, who will thus be provided with wholesome, convenient, and economical residences supplied with all proper sanitary accommodation. The Plunket-street area is also to be cleared, and although the expense is great, such an immense improvement from a sanitary, social, and moral point of view, is most desirable.

In consequence of a promise by the Chief Secretary for Ireland that certain charges made against the management of the Belfast Workhouse by Mr. Moore, M.P., for Clonmel, should be thoroughly sifted, the Local Government Board for Ireland recently instituted an inquiry into the condition of that institution in reference to the discipline and classification of its inmates, the rate of infant mortality, and the accommodation for the destitute poor. The inquiry was conducted by Mr. Bourke and Dr. Brodie; and last week their report was furnished to the Belfast guardians. They state as the result of their investigation that they found the workhouse very well managed as a rule, the hospital for infectious diseases and the schools being specially worthy of praise for their admirable and efficient condition. The classification of the inmates, as regards the separation of the sexes, was found to be sufficiently perfect and complete; and the rate of infant mortality was equal to 27·9 per cent., which was not unusually high, when the habit prevalent among mothers of taking their infants out of the house as soon as they (i.e., the mothers) are able to move, and then returning, is considered. The charges put forward by a magistrate, and referred to in Parliament, that the workhouse was "a nest of drunkenness, immorality, and crime," have been proved to be without foundation.

Typhus fever is rather prevalent at present in Dublin, and for this additional reason it is absolutely necessary that cases of the disease occurring in tenemental dwellings, where accommodation is not sufficient, and the chance of infecting others is greatly increased, should be promptly removed to hospital. Recently a case of inattention on the part of a dispensary medical officer in Dublin to this wise procedure came under the observation of the Public Health Committee of the Corporation; where in one tenement house several cases of typhus fever had taken place, and the medical attendant had not enforced their removal to hospital. His explanation was not deemed sufficient by the Committee, who considered that it was his imperative duty to report the cases to them; and this view of the matter was acquiesced in by the Local Government Board, who, in a recent correspondence with the gentleman in question, stated that the Committee should have been informed of the fact of such an outbreak of a dangerous infective disease.

By the 20th section of the 43rd and 44th Vic., cap. 13, of the Births and Deaths Registration Act (Ireland), 1880, which came into operation on the first day of the present year, every registered medical practitioner who has been in attendance during the last illness of a deceased person is required to give a certificate stating, to the best of his belief, the cause of death. Refusal to give such certificate entails a penalty not exceeding forty shillings.

The Bangor Town Commissioners have applied for a loan of £14,000, to enable them to carry out a water and sewerage

scheme, &c., and the 25th instant has been arranged for the holding of local inquiry into the matter.

Mrs. Sarah Green died on Christmas Eve, at Tullabeg, Coalisland, at the alleged age of 101 years.

Deputy Surgeon-General J. L. Jameson has been appointed principal medical officer at Cork, in succession to Surgeon-General Thompson, now principal medical officer in Ireland.

THE GARRISON HOSPITAL OF HAMBURGH-ALTONA.

(From a Correspondent.)

IT is a much-disputed question in Germany whether the "corridor," the "pavilion," or the "barrack" system for hospitals is the best. Having been most kindly shown over one of the best and newest "corridor" hospitals in the empire, a short sketch of it may not be uninteresting.

The Garrison Hospital of Hamburgh-Altona is of red brick, three-storeyed, and contains 212 beds; central entrance, staircases stone. It stands in a garden and is surrounded by fields and open country, facing south. The two upper floors contain the wards, the lower offices, pharmacy, medicine, and surgical appliance; depôt for the whole corps, the ninth; two wards for sick officers, with servants' rooms attached; rooms for the hospital attendants, a small operating room, &c. The hospital orderlies, men detached from their regiments, and having subsequently undergone one year's training, sleep on barrack beds, iron bedsteads with planks, straw mattresses, &c., six in each room; each man has the usual barrack lock-up cupboard. The two upper floors are divided into three "stations"—surgical, medical, or "external" and "internal," and the third for venereal, eye, and skin diseases. Of venereal patients the division contained but few, the supervision of the police under the Contagious Diseases Act having lately become much stricter, the number of venereal cases has decreased in consequence. With one exception, the wards contain only six beds, with an allowance of 1200 cubic feet of air for each patient. The doors opening on to the corridor are numbered, and marked with the cubic contents of the room. Numerous and large are the windows of the corridor, as also those of the wards. These latter are provided with curtains. The whole building is supplied with gas and hot and cold water, the latter being laid on to different parts in the corridor for the patients' use. Floors polished wood. Bedsteads iron, with wire-wove mattress, with head-piece, on which lies another of horsehair. These are most comfortable beds. As also at Metz, the venereal patients here have to be satisfied with a less agreeable arrangement, lying as they do on seaweed mattresses placed on boards. One double bedside table with folding doors stands between every two beds. Two wooden washhandstands with metal basins for each ward. Black bed-head board and clothing the same as at Metz. Latrines—waterclosets, the opening of the door admitting water; urinals with constant supply of water. On each floor is a room specially set apart for smoking (nowhere else is it permitted); also a bath-room with full-length baths; a vapour-bath with cooling chamber, bed, and stove for warming linen; a small kitchen for making poultices, drinks, &c., the heating being done by steam. The upper floor contains quarters for the resident assistant-surgeon—one month on duty; the second a large operating room, a chapel, and a dark room for ophthalmoscopic examinations. The whole building is warmed, both with hot water and warm air, by means of a boiler and steam-engine in the basement. The water, contained in a series of coiled metal pipes lying in a very large brick oven, is heated to about 200°; it then rises to reservoirs in the ceiling of the upper floor, whence it is distributed by numerous small pipes into the warming apparatus proper of the wards and corridors. This consists of six or eight metal pipes, each of about four inches diameter, arranged perpendicularly in a circle, though not actually in contact, and communicating only at the top and bottom. These hot-water "stoves" stand one in each ward, and several in the corridors, reaching almost from the floor to the ceiling. The water, after passing through these, runs out again through a small pipe at the bottom into reservoirs under the floor, whence once more it finds its way in the same manner through the wards and corridors below, and so on again back into the boiler, after warming the first floor, to commence its rounds once more. It is of course evident that the temperature of the upper floor must be higher than that of the second, and this higher than that of the first; and it is found that the water, when it returns to the basement from its transit through the building, has lost about fifty degrees of heat. The wards are further warmed, as also ventilated, by means of a large wheel, shaped like a ship's screw, worked by a steam-engine. It rotates below the basement floor, draws in the external air through a high chimney built at some distance from the building, and communicating with it by means of a subterranean passage. In winter the air is passed over a series of pipes heated by steam, and then forced into the different wards through shafts contained in the walls dividing the rooms from corridor, communicating with the wards by valved openings near the floor, and others near the ceiling opposite the windows. In summer the air is not previously warmed. Near the windows are louvred openings communicating with the outside through ventilating shafts. The amount of air admitted can be regulated by a contrivance from the corridor; cold air can be supplied through one, and hot air through the other, opening into the ward at the same time. The cooking is by steam, in metal boilers cased with wood. These are the chief points of interest in this "model" hospital.

I add the following extract from the last *Décret*, June 15th, 1880, relating to appointments in the Medical Department of the French Army.

In every September an examination will be held for candidates for the Medical Department of the army, the primary conditions being the following:—All candidates must be born or naturalised French subjects. Those already doctors of medicine not to be more than twenty-six years of age; students of medicine not to be more than twenty-five years of age, but not less than twenty-two. An engagement to serve in the department for at least ten years from the date of being appointed assistant-surgeon of the second class. It is ordered that, in future, appointments be open to doctors and students of medicine of sixteen, twelve, and eight "inscriptions" (courses of lectures attended), who shall have passed the corresponding examinations. Those considered qualified and commissioned as candidates for the department—in numbers as required—are divided into two classes, the first composed of students merely, the second of those who have already taken the degree of doctor. Candidates of the first category will have to undergo the same education and the same examinations as civilians for the title of doctor of medicine—three years. They may choose their place of residence and study from among eleven cities in France, Paris included, named in the *Décret*. Attached to a military hospital, or to the military division of a civil hospital, under the orders and surveillance of the surgeon-in-chief, they will assist in the hospital work, and at the same time follow the complete course of lectures and general study, &c., of the school in which they are inscribed. The candidates do not wear uniform, but are under a certain discipline, and receive a fixed yearly sum of 1200 francs for their general expenses and the purchase of the necessary books and instruments. Should the student fail in his examination twice, he will be dismissed, and repay all moneys advanced by the State. Candidates of the second class, doctors of medicine, enter the School of Military Medicine, Val-de-Grâce, with the title of "stagiaires," at once, on the condition of their being passed bodily fit for the service. They draw 2000 francs per annum, wear uniform, obtaining a grant for their first outfit. While at the school they are made familiar with medicine and surgery as applied to the army, theoretically and practically, also with official work and routine. The course to last at least eight months. After a successful examination, these "stagiaires" become "aides-major," or assistant-surgeons of the second class.

THE Municipal Council of Paris has, it is reported, voted a sum of £400 for the establishment of a School of Chemistry, which will be free to the pupils of the municipal schools who are desirous of practice in chemical industries. The smallness of the sum is noteworthy.

Obituary.

CHRISTOPHER FLEMING, M.D., F.R.C.S.I.

THIS gentleman died on the 30th ult. at Donnybrook, County Dublin, aged eighty years. Dr. Fleming had for some years retired from practice, but formerly held the appointment of visiting surgeon to the Richmond Hospital, and was a member of the Surgical Court of Examiners in the Royal College of Surgeons in Ireland, of which institution he was president in 1859–60. Deceased was a graduate in Arts and Medicine of the University of Dublin, consulting-surgeon to Steevens's Hospital, a member of the Royal Irish Academy, and formerly corresponding member to the Surgical Society, Paris. He was the author of some medical papers, including one on the subject of chloroform in surgery, and published in 1877 a work entitled "Clinical Records of Injuries and Diseases of the Genito-urinary Organs."

Medical News.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.—The following gentlemen were admitted Licentiates of the College on Dec. 30th:—

Allen, Thomas William James, University Hospital.
Bathe, Anthony John, Whittington Villas.
Bull, Geo. Coulson Robins, London-street, Paddington.
Carpenter, Arthur Bristowe, Duppas House, Croydon.
Grayling, Arthur, Forest Hill.
Harvey, Sidney Frederic, Catherina-terrace, Lansdowne-road.
Macdowall, Cameron Joseph Francis Stuart, Osnaburgh-street.
Maynard, Foster Fowler Martin, St. Andrew's Park, Hastings.
Mills, Thomas Wesley, M.D. McGill, Murray-street.
Patten, Charles Arthur, Marpool House, Ealing.
Pearce, Walter, Oxford-terrace, Edgware-road.
Phillippe, William Alfred, Longton-grove.
Renshaw, Israel James Edward, Sale, Manchester.
Wilkinson, Frank Tichborne, Dean-street.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The following gentlemen passed the Primary Examination in Anatomy and Physiology at a meeting of the Board of Examiners on the 5th inst.:—

Charles Slater, Thomas Rushbrooke, and Harry Groom, Cambridge; Edward Paxton and Joseph Whittaker, Owens College, Manchester; John F. G. Dill, Cambridge and Guy's Hospital; Charles W. Thompson, Leeds; Frank Pearse, Guy's Hospital; Albert G. Cunningham, Bristol; William H. Burke, Dublin; Henry S. Wood, Melbourne; Thomas Kelly, McGill College, Montreal; Joseph H. Powell, Bristol.

The Library of the College will be closed on Friday, the 14th, and Saturday, the 15th inst., in consequence of the examination for the Membership.

UNIVERSITY OF DURHAM.—The following name should have appeared in the list published in our issue of Dec. 18th of gentlemen who had conferred on them the M.D. degree:—

Bedford Fenwick, M.B., M.R.C.S.

LONGEVITY OF MEDICAL MEN.—The calendars of the Royal Colleges of Physicians and Surgeons, London, give some rare examples of longevity amongst their fellows and members—viz.: Archibald Billing, F.R.C.P., of Park-lane, completes his ninetieth year on the 10th inst.; Joseph Hurlock, F.R.C.P., of Brighton, is eighty-eight; Sir Thomas Watson, Bart., F.R.S., D.C.L., eighty-eight; Alexander Tweedie, F.R.S., F.R.C.P., eighty-six; James Arthur Wilson, F.R.C.P., of Holmwood, near Dorking, eighty-five; Bisset Hawkins, F.R.S., F.R.C.P., eighty-four; Sir James Alderson, F.R.S., late President of the Royal College of Physicians, eighty; Christopher J. R. Allatt, F.R.C.P., of Dover, eighty; Sir George Burrows, Bart., F.R.S., D.C.L., late President of the Royal College of Physicians, seventy-nine; James Muscroft, F.R.C.S., of Pontefract, ninety-five; T. M. Greenhow, F.R.C.S., of Leeds, ninety; Robert Tayler, F.R.C.S., of Brighton, ninety-one; James Moncrieff Arnott, F.R.S., late President of the Royal College of Surgeons of England, eighty-seven; John Flint South, F.R.C.S., of Blackheath, eighty-four; Cæsar Henry Hawkins, F.R.S., F.R.C.S., Serjeant Surgeon to the Queen, of Grosvenor-street, eighty-three; James Luke, F.R.S., F.R.C.S., Consulting Surgeon to the London Hospital, eighty-three; Robert M'Cormick, R.N., F.R.C.S., Deputy Inspector of Hospitals and Fleets, eighty-three; this gentleman accompanied Sir Edward Parry as Assistant Surgeon in Her Majesty's ship *Hecla* in the attempt to reach the North Pole in 1827.—*The Daily Telegraph.*

MR. JOHN DUNCAN, a weaver, has presented to the University of Aberdeen a collection of botanical specimens, which he had accumulated with his own hands, and which is stated to be unique in respect of its value and completeness.

BEQUESTS AND DONATIONS TO MEDICAL CHARITIES. The late Sir Thomas Hare, Bart., of Stow Hall, Norfolk, bequeathed a legacy of £100 to the West Norfolk and Lynn Hospital.

PRESENTATION.—Dr. John Finigan, of Addison Lodge, Glasnevin, county Dublin, has been presented with an address and a valuable service of solid silver plate.

THE Fishmongers' Company have made a grant of 100 guineas towards the cost of the new buildings at St. Bartholomew's Hospital.

THE salaries of Dr. Brett, medical officer to the Union house and district of Watford, have been increased from £55 and £70 to £70 and £100 per annum respectively.

Medical Appointments.

Intimations for this column must be sent DIRECT *to the Office of* THE LANCET *before 9 o'clock on Thursday Morning, at the latest.*

BENTHALL, W., M.R.C.S.E., has been appointed House-Surgeon to the Derbyshire General Infirmary, vice Hough, resigned.

DOBSON, A., L.R.C.S., L.R.C.P., has been reappointed Medical Officer for the West District of the Holbeck Union.

DONKIN, W. F., M.A., has been appointed Public Analyst for the County of Wilts.

EVERARD, H. N., M.B., has been appointed House-Surgeon and Apothecary to the Leicester Infirmary and Fever Hospital, vice Moore, resigned.

HOOPER, C., M.R.C.S.E., L.S.A.L., has been appointed Medical Officer of Health to the Aylesbury Rural Sanitary Authority.

HUMBLE, G. A., M.D., M.R.C.P.L., has been appointed (*pro tem.*) Physician to his Excellency the Governor of Patagonia (South America) and Staff, vice Dr. Baraja, deceased.

HYSLOP, J., M.B., C.M., has been appointed Assistant-Physician to the Royal Edinburgh Asylum, Morningside.

LEITCH, J., M.B., C.M., has been reappointed Medical Officer of Health for the Holme-Cultram Urban Sanitary District, Cumberland.

LONGFORD, H., L.K.Q.C.P.I., L.R.C.S.I., has been appointed Medical Officer to the Thirsk District and the Workhouse of the Thirsk Union, vice Ryott, deceased.

MALLINS, H., M.B., C.M., has been appointed Medical Officer to the Walton District of the Wayland Union.

MANBY, A. R., M.R.C.S.E., L.S.A.L., has been appointed Medical Officer for the Leedham District of the Docking Union.

MOORE, Mr. E. H., has been reappointed Public Analyst for the Eastern Division of the County of Sussex.

PADDISON, E. H., M.B., has been appointed a Junior Assistant Medical Officer to the Surrey County Lunatic Asylum, vice Hosking, resigned.

PATTINSON, J., F.C.S., has been appointed Public Analyst for the Borough of Gateshead.

PAYNE, C. A., M.R.C.S.E., L.S.A.L., has been appointed Medical Officer of the Workhouse, Shoreditch Union, vice Hargreaves, resigned.

POTTER, H. P., F.R.C.S., M.R.C.S.E., L.S.A.L., &c., Medical Registrar of St. Thomas's Hospital, has been appointed Resident Medical Superintendent to St. Mary Abbott's, Kensington, at a salary of £300 per annum, rising to £350 after the first year, with house &c., vice W. B. Whitmore, M.B., resigned.

REDWOOD, T., Ph.D., has been reappointed Public Analyst for the Parish of St. James and St. John, Clerkenwell.

STODDART, Mr. F. W., has been appointed Public Analyst for the City of Bristol, vice W. W. Stoddart, deceased.

TOWLSON, H. J., M.R.C.S.E., has been appointed Medical Officer to the Barrowden District of the Uppingham Union.

VACHER, F., F.R.C.S., has been reappointed Public Analyst for the Borough of Birkenhead.

WALTER, W., M.D., L.K.Q.C.P.I., L.R.C.S.I., has been appointed Honorary Surgeon to St. Mary's Hospital, Manchester, vice Heslop, resigned.

WELLS, A. G., M.R.C.S.E., L.S.A.L., has been appointed Medical Officer to the Third District of the Fulham Union.

Births, Marriages, and Deaths.

BIRTHS.

BUCK.—On the 2nd inst., at Ryde, the wife of Thomas Alpheus Buck, M.B. Lond., of a son, stillborn.

COLENSO.—On the 28th November, at Durban, Natal, the wife of Robt. J. Colenso, M.B., M.R.C.S.E., of a son.

CONSTABLE.—On the 2nd inst., at Kennington-park-road, the wife of Joseph J. Caffry Constable, M.D., of a son.

HOLLAND.—On the 27th ult., at Maida-vale, W., the wife of J. Holland, M.D., of a daughter.

KISCH.—On the 31st ult., at Sutherland-gardens, Maida-vale, the wife of Albert Kisch, M.R.C.S.E., of twin sons.

RANDELL.—On the 2nd inst., at Vanbrugh-park, Blackheath, the wife of E. B. Randell, M.R.C.S.E., L.D.S., of a daughter.

TREDINNICK.—On Christmas Eve, the wife of Ernest Tredinnick, of Strefford, Craven Arms, of a daughter.

MARRIAGES.

BARLOW—DALMAHOY.—On the 20th ult., at 60, Queen-street, Edinburgh, by the Rev. A. Whyte, M.A., Thomas Barlow, M.D., F.R.C.P., to Ada Helen, daughter of the late Patrick Dalmahoy, Esq., Writer to the Signet.

GAMBLE—SHIPLEY.—On the 28th ult., at St. Peter's, Eastgate, Lincoln, Ernest G. Langwith Gamble, L.R.C.P.I., to Emmeline, youngest daughter of G. H. Shipley, of Lindum House, Lincoln.

HAYWARD—MACKENZIE.—On the 30th ult., at Union Chapel, Oxford-street, Manchester, by the Rev. Alexr. McLaren, D.D., Thos. Ernest Hayward, M.B. Lond., F.R.C.S.E., of Haydock, Lancashire, to Catharine, only daughter of Melville Mackenzie, of Edinburgh.

JONES—REEDER.—On the 20th ult., at Wath-upon-Dearn, by the Rev. John Jones, Vicar of Blaenavon (father of the bridegroom), assisted by the Rev. H. Partington, Vicar, William Makeig Jones, of Wath, to Annie Tofield, only daughter of Thomas Reeder, of Wath.

DEATHS.

BUCK.—On the 29th ult., at the County Lunatic Asylum, Leicester, John Buck, M.R.C.S., for twenty-eight years Medical Superintendent of that Asylum, aged 64.

EVANS.—On the 31st ult., at Rome, of typhoid fever, George Harrison Evans, M.B., F.R.C.S., of Chad-road, Edgbaston, elder son of the late G. F. Evans, M.D., F.R.C.P., Birmingham, in his 36th year.

NEYLAN.—On the 10th November, at Bowral, Sydney, New South Wales, John Desmond Neylan, M.R.C.S.E., L.S.A.L., Order of Medigié (Fourth Class), of County Clare, Ireland, in his 30th year. R.I.P.

PRENTICE.—On the 29th ult., at his son's residence, Campbell-road, Bow, Alfred Prentice, M.D., in his 70th year.

WHITE.—On the 29th ult., at Duncan-terrace, Newington, Edinburgh, William Alexander White, M.D., F.R.C.S.E., Deputy Surgeon-General (Retired), Army Medical Department.

WHYTE.—On the 2nd inst., at Clifton, Bristol, Charles Whyte, Inspector-General of Army Hospitals, aged 85.

N.B.—*A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.*

INTERNATIONAL MEDICAL CONGRESS.

LONDON, AUGUST 2ND TO 9TH, 1881.

SECTION XIV.—MILITARY SURGERY AND MEDICINE.

Surgeon-General Prof. LONGMORE, C.B., President.

Sir WILLIAM MUIR, M.D., K.C.B., Director-General, Army Med. Dep.
Surgeon-General Sir JOSEPH FAYRER, K.C.S.I., M.D., LL.D., F.R.S., India Office,
Dr. J. W. REID, Director-General, Med. Dep. of Navy,
} Vice-Presidents.

Dr. W. H. LLOYD, Fleet Surgeon, R.N.,
Surgeon-Major SANDFORD MOORE, Aldershot,
Surgeon A. B. R. MYERS, Coldstream Guards,
} Secretaries.

Proposed List of Subjects for Discussion, subject to revision before 31st December, 1880.

1. By what arrangements can the practical difficulties in the way of employing antiseptic surgery (Listerism) in the treatment of wounds inflicted in the field in time of war be most readily overcome? (The discussion to include (*a*) the system on which the treatment can be most efficiently carried out; and (*b*) the fittest material means to be employed in it, under the circumstances in which armies are placed while on active service.)

2. To what extent, and in what special directions, has conservative surgery advanced in field practice, as shown by statistical results of the treatment adopted for gunshot wounds during the wars of the last ten years? and what indications have been afforded, if any, by the experience gained during this period for making further advances in the conservative treatment of such injuries?

3. What are the most reliable, and at the same time practicable, means of immobilising the parts involved in gunshot fractures of the Spine, Pelvis, and Femur in field practice?

4. On improvements in field hospital and transport equipment, for use with armies moving in uncivilised or partially civilised countries, suggested by the experience gained during the recent military operations by British troops in South Africa.

5. On the prevalence and prevention of Typhoid Fever among young soldiers in India.

Medical Diary for the ensuing Week.

Monday, Jan. 10.

ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations, 10½ A.M. each day, and at the same hour.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.—Operations, 1½ P.M. each day, and at the same hour.

METROPOLITAN FREE HOSPITAL.—Operations, 2 P.M.

ROYAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.

ST. MARK'S HOSPITAL.—Operations, 2 P.M.; on Tuesday, 9 A.M.

MEDICAL SOCIETY OF LONDON.—8½ P.M. First Lettsomian Lecture: Sir Joseph Fayrer "On Tropical Dysentery and Diarrhœa."

Tuesday, Jan. 11.

GUY'S HOSPITAL.—Operations, 1½ P.M., and on Friday at the same hour.

WESTMINSTER HOSPITAL.—Operations, 2 P.M.

WEST LONDON HOSPITAL.—Operations, 2 P.M.

ANTHROPOLOGICAL INSTITUTE OF GREAT BRITAIN AND IRELAND.—8 P.M. Ordinary Meeting.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.—8.30 P.M. Mr. Knowsley Thornton, "On one hundred and seventy-two Antiseptic Abdominal Sections, with remarks on the causes of death in the fatal cases"; Mr. Frederick Treves, "On a case illustrating the condition of Large Arteries after Ligature under Antiseptic and Non-antiseptic Measures"; Mr. Henry Lee, "On Radical Cure of Varicocele"; Mr. Jer. M'Carthy, "On Aneurism of the Axillary Artery treated by Antiseptic Ligature of third part of Subclavian Artery."

Wednesday, Jan. 12.

NATIONAL ORTHOPÆDIC HOSPITAL.—Operations, 10 A.M.

MIDDLESEX HOSPITAL.—Operations, 1 P.M.

ST. BARTHOLOMEW'S HOSPITAL.—Operations, 1½ P.M., and on Saturday at the same hour.

ST. THOMAS'S HOSPITAL.—Operations, 1½ P.M., and on Saturday at the same hour.

ST. MARY'S HOSPITAL.—Operations, 1½ P.M.

KING'S COLLEGE HOSPITAL.—Operations, 2 P.M., and on Saturday at 1 P.M.

LONDON HOSPITAL.—Operations, 2 P.M., and on Thursday and Saturday at the same hour.

GREAT NORTHERN HOSPITAL.—Operations, 2 P.M.

UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M., and on Saturday at the same hour.

SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN.—Operations, 2½ P.M.

HUNTERIAN SOCIETY.—7½ P.M. Council Meeting.—8 P.M. Mr. Jonathan Hutchinson "On the Clinical Importance of Recognising the Precancerous Stage of Cancer."

SOCIETY FOR THE ENCOURAGEMENT OF ARTS, MANUFACTURES, AND COMMERCE.—8 P.M. W. Fleeming Jenkin, F.R.S., "On a Sanitary Protection Association for London."

ROYAL MICROSCOPICAL SOCIETY.—8 P.M. Prof. P. Martin Duncan, "On three Microsponsiadæ belonging to the Hexactinellids from the deep sea"; Mr. G. Shadbolt, "On the Aperture Question"; Prof. E. Abbe, "On the True Conditions of Stereoscopic and Pseudoscopic Effect in Microscopical Vision"; Mr. A. D. Michael, "On a Species of Acarus believed to be unrecorded."

OBSTETRICAL SOCIETY OF LONDON.—8 P.M. Specimens will be shown by Dr. Chambers, Mr. Doran, Dr. Horgan, and others. Papers: Dr. Thomas Chambers, "On Complete Extirpation of the Uterus with both Ovaries (recovery)"; Dr. W. R. Rogers, "On a Case of Chronic Complete Inversion of the Uterus successfully treated by Sustained Elastic Pressure"; Dr. Matthews Duncan, "On Delivery in a case of Double Uterus"; and other communications.

Thursday, Jan. 13.

ST. GEORGE'S HOSPITAL.—Operations, 1 P.M.

ST. BARTHOLOMEW'S HOSPITAL.—1½ P.M. Surgical Consultations.

CHARING-CROSS HOSPITAL.—Operations, 2 P.M.

CENTRAL LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M., and on Friday at the same hour.

HOSPITAL FOR WOMEN, SOHO-SQUARE.—Operations, 2 P.M.

NORTH-WEST LONDON HOSPITAL.—Operations, 2½ P.M.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.—8.30 P.M. Mr. Higgens, "On Hyposcleral Cyclotomy"; Dr. W. A. Bailey, "On a rare form of Muscular Asthenopia"; Mr. Hulke, "On Ophthalmoplegia Interna"; Dr. A. D. Davidson and Mr. Fitzgerald (Dublin), "On Cases of Detachment of the Retina in Albuminuric Retinitis." Living specimens must attend at 8 o'clock.

Friday, Jan. 14.

ST. GEORGE'S HOSPITAL.—Ophthalmic Operations, 1½ P.M.

ST. THOMAS'S HOSPITAL.—Ophthalmic Operations, 2 P.M.

ROYAL SOUTH LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M.

QUEKETT MICROSCOPICAL CLUB.—7 P.M. Conversation and Exhibition of Objects.

CLINICAL SOCIETY OF LONDON.—8½ P.M. Annual Meeting.—Election of Officers.—Report on the Treatment of Hip Disease, with especial reference to the Operation of Excision.—Mr. Croft, "On a case of Traumatic Hydronephrosis"; Dr. R. H. Lloyd, "On two cases of Myxœdema"; Dr. Sutherland, "On a case of Chronic Vomiting, in which no food except Koumiss was taken for sixteen months."

Saturday, Jan. 15.

ROYAL FREE HOSPITAL.—Operations, 2 P.M.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Stewart's Instruments.)

THE LANCET OFFICE, January 6th, 1881.

Date.	Barometer reduced to Sea Level, and 32° F.	Direction of Wind.	Dry Bulb	Wet Bulb	Solar Radia in Vacuo	Max. Temp Shade	Min. Temp	Rain fall.	Remarks at 8.30 A.M.
Dec. 31	30·62	N.	36	34	..	38	32	·06	Overcast
Jan. 1	30·35	N.	35	33	..	45	31	..	Bright
,, 2	30·50	S.E.	44	43	..	46	33	..	Foggy
,, 3	30·28	S.E.	44	42	..	46	41	..	Overcast
,, 4	30·32	E.	42	39	..	44	36	..	Overcast
,, 5	30·28	N.E.	43	40	..	45	37	..	Cloudy
,, 6	30·44	E.	38	35	..	43	35	..	Cloudy

Notes, Short Comments, and Answers to Correspondents.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Local papers containing reports or news-paragraphs should be marked.

Letters, whether intended for publication or private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

Lectures, original articles, and reports should be written on one side only of the paper.

We cannot prescribe, or recommend practitioners.

All communications relating to the editorial business of the journal must be addressed "To the Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *to be addressed "To the Publisher."*

BEARDS AND MOUSTACHIOS.

Inquirer.—It would seem to be dawning on the consciousness of the male population that, after all, beards do not make as effective throat protectors as may be purchased for a shilling, or moustachios the best and most convenient of respirators; while in respect to both these apparatus the natural have to be endured constantly, whereas the artificial need only be employed in times of need or at pleasure. We fear the laborious argument that it was healthful to man to spare himself the trouble of shaving was somewhat strained, and that the wish for a fashionably formidable appearance was father to the thought of healthfulness as regards the wearing of beards and moustachios. The number of persons returning to the old English practice of shaving both the chin and the upper lip is noticeably increasing, and there is certainly much to be said for the clean and orderly character of the result. It is, at least, a remarkable circumstance that throat affections have not died out, or, we believe, sensibly diminished, since the custom of growing the beard became general. It must in the long run be a matter of personal predilection whether a man shaves or leaves his face embellishment to nature. It is practically in this case, as in most others, idle to seek an argument in favour of the vagaries of fashion in the code of health laws.

ESCAPE OF WORMS BY THE EXTERNAL MEATUS.

To the Editor of THE LANCET.

SIR,—A few weeks ago I saw a case reported in your journal of rupture of both tympanic membranes by the common round worm, the worms making their escape, one by the right, the other by the left external ear. I have had lately a somewhat similar case under my care, in which the right tympanum was ruptured, giving rise to a good deal of hæmorrhage and slight deafness, the worms, three in number, escaping by the external meatus.

Yours truly,

Beeford, Hull, Dec. 14th, 1880. JNO. DICKSON, M.B.

Mr. James Robertson.—We are unable to answer the question.

OPIUM CRAVING.

To the Editor of THE LANCET.

SIR,—Would any of your readers who have had experience in the treatment of opium-eaters be so good as to give me the most suitable remedy or remedies for the relief of the craving in a patient of mine who has been in the habit of taking the drug for twenty-eight years, at times as much as one and a half drachms per diem? and oblige, yours truly,

C. CLARK BURMAN, L.R.C.P. & S., &c.

Belford, Northumberland.

INSANITY IN AMERICA.

AT a recent meeting of the Council of the National Association for the Protection of the Insane and the Prevention of Insanity, held at New York, the President, Dr. H. B. Wilbur, stated there were at least 60,000 insane persons in the United States, and that of these one-half were in State asylums or hospitals, about 2000 in incorporated or private institutions, about 7000 in city or county asylums, and some 16,000 in county poor-houses or in the custody of friends. The object of the above Association is to bring about an improved method of treatment of the mentally unsound, by directing attention more to the cure of the malady than to the restraint of its victims.

TONGA.

To the Editor of THE LANCET.

SIR,—I have a letter before me dated Fiji, September 7th, 1880, written by a gentleman long a resident in the country to his father in England. As this gentleman seems to know a great deal about the discovery of tonga, I shall, with your permission, give an extract or two from his letter. The history of the discovery of tonga which he gives differs somewhat from that mentioned by Dr. Bancroft, as stated in Mr. Christy's letter in your impression of December 4th.

The letter says, "At Lau, in Lomaloma, the windward portion of this group, has resided for many years a Mr. Veccey, a Hungarian gentleman, married to a half-caste Tongan wife. For above two years he suffered so much from neuralgic pains in the head that he went almost mad at times. His wife persistently stated that the Fijians could cure him, but some latent fear of poison for a long while operated to prevent his trying any native medicine. Finally he acceded to his wife's entreaties, and consented to try the natives' remedies, but conditionally that the medicine should be shown to him before he took it. During two years Mr. Veccey took and tried no less than fifty-five different medicines—the juices of leaves, barks, and roots—all of which he would only take after seeing the plant or tree from which they were taken, and he obtained on each occasion the native name and took a written note of it.

"From the bulk of these remedies he received no visible relief, nor could he perceive any effect; but from four of them he derived some temporary alleviation from his long-sustained agony. Finally, a medicine was brought to him which in four doses effected a complete and permanent cure.

"One of the Messrs. Ryder of Mango going home, Mr. Veccey entrusted to him a few packages of medicine consisting of the four barks which had alleviated his sufferings and the one that had cured him, so cut up and mixed as to defy discovery, nor did he entrust the secret to Mr. Ryder. He simply requested Mr. Ryder to endeavour to ascertain if the medicines contained any new and unknown valuable properties, and, if so, if he could make a commercial speculation of them.

"I may add that the barks are cut to shreds and mixed to prevent discovery, and every effort here is used to keep them a secret."

The name "tonga" was given to the combination of barks in obedience to the wishes of Mr. Veccey's wife.

I am, Sir, yours truly,

Lincoln, Dec. 10th, 1880. W. O'NEILL, M.D., M.R.C.P. Lond.

To the Editor of THE LANCET.

SIR,—I sent you a few days since a letter upon tonga, and some remarks made by Dr. Bancroft upon Alstonia constricta, stating that he used it in Australia for fevers, &c., and found it as efficient as quinine.

I have just received from Dr. O. Hesse of Feuerbach (to whom I sent a supply of Alstonia constricta some time since for the purpose of investigation) a valuable paper of his in Liebig's "Annalen der Chemie," Band 205, pp. 360–371, in which he describes at length two alkaloids that he has obtained from the bark—viz., alstonia and alstonidin.

I trust that the value of these alkaloids will soon be tested in this country by physiologists, as will no doubt be the case in Germany before long. An alkaloid which would replace and be equal to quinine in its effects, but be obtainable at a lower price, would be a boon in many parts of the globe. I may add that I believe that Dr. Hesse is analyst for Messrs. Jobst, one of the largest quinine manufacturers in the world.

Yours truly, T. CHRISTY, F.L.S.

Dr. J. M'Gregor Maclagan.—The report may be obtained on application to the present medical officer of health of the district.

GLACIALINE.

To the Editor of THE LANCET.

SIR,—I have read with no little surprise the letter in THE LANCET of January 1st, signed by two members of the profession, extolling the virtues of glacialine. All that the writers state may be perfectly true, and probably is so; but what is glacialine? Some time since a medical friend bought in Glasgow a box of this powder, and as its use was recommended for the preservation of every edible substance, he thought it desirable to know its nature and properties, and for this purpose sent some of it to me for analysis, the result revealing it to be pulv. sodæ biboracis pure and simple.

The moral I wish to convey here is that we (the English people) are at present having such a flood of these "frivolous" things puffed and advertised and put into the channels of business, and recommended for every mortal ill, that it is high time to stem the tide, if it be possible. It is astonishing what virtues a substance possesses when it is not known what it is.

Yours faithfully,

Jan. 3rd, 1881. F. M. RIMMINGTON, F.C.S., Public Analyst.

EATON v. BARKER.

A CORRESPONDENT writes to us:—

"In your annotation of the case of Eaton v. Barker and others you say 'If the people of Grantham will allow Mr. Eaton to be thus deprived of his legitimate fees, &c., it will be incumbent upon the profession to interfere in his relief.'

"Would it not be better for the profession to take the lead, and show the newly organised corporation of Grantham what we think of Mr. Eaton's conduct in undertaking the risky duties, for which he claims but very reasonable remuneration?

"No doubt there will be many right-minded people in Grantham, although they are indifferently represented in the corporation, and these will be influenced by the very significant judgment delivered by Mr. Justice Stephens; but I think we ought to move in the matter ourselves, and, in order to facilitate the movement, I beg to suggest that a medical officer in each union should collect what subscriptions he can from his professional brethren, and remit them to you in lump sums, to be presented to Mr. Eaton, with a suitable address setting forth the motives of the subscribers.

"I shall be happy to receive subscriptions in my union and to include my mite, whether you adopt my suggestion, or whether you propose an amendment to it."

"TEMPERAMENTS."

To the Editor of THE LANCET.

SIR,—The note on "Temperaments" in your issue of December 4th having made me desirous of reading up the subject, I shall be greatly obliged by you or any of your numerous readers naming the best sources of information, whether in connexion with medicine, or as a part of general knowledge.—I am, Sir, yours truly, F.R.C.S.E.

December 15th, 1880.

A Provincial House-Surgeon.—1. *No.*—2. The coroner is bound to issue his summons in accordance with a prescribed form.

FATAL MIDWIFERY CASE IN PRIVATE PRACTICE.

To the Editor of THE LANCET.

SIR,—I send you notes of a fatal case of labour which took place under my care lately. I often think that if, instead of our successes, our failures were recorded, they would be much more instructive.

Mrs. W——, aged twenty-five, a fine, healthy, well-made young wife, began in labour for her second child at midnight of December 18th, 1880. I was sent for at 12.30, found all going on well, and at 2 A.M. a fine female child was born. The placenta came away easily in about ten minutes; the uterus contracted firmly, and remained so. I went upstairs to see her before leaving at 3 A.M. (one hour after delivery). She said she felt quite well, and not a bit reduced; her pulse was 72, of good tone, and the uterus still firmly contracted. I left her with a perfectly easy mind.

At 9 A.M. (seven hours after delivery) I was hastily summoned, and on arriving found her in a state of collapse, and evidently dying. The uterus was firmly contracted; there was and had been no hæmorrhage; the body, extremities, head, tongue, and breath were absolutely cold; not the faintest pulse in either wrist, and only a faint, flabby, second sound over the heart; the face and hands were livid; intense pain referred to the epigastrium and extreme—very extreme—dyspnœa; and although her lungs evidently filled well with air, her constant entreaty was for "more breath." Her intellect was unaffected.

I at once came to the conclusion that this was a case of thrombus of the pulmonary artery, and having given her a strong stimulant with a dose of sedative solution of opium to ease her pain, I sent for my able and experienced colleague, Dr. Robinson, who came at once, and on examination entirely concurred in my view of the case. We gave stimulants (ether and ammonia) freely, with hot bottles and friction to the limbs, with the view of rousing the heart and forcing the circulation, in the faint hope that possibly the plug might be broken up and forced into the smaller pulmonary arteries (ending in the lesser evil of infarction of the lesser arteries of the lungs), but without avail, as she quietly died about 10 o'clock (one hour after I was sent for). She was a very healthy girl, with no history of rheumatism or other disease.

Comment or speculation on the case from me is needless.

Yours very truly,

JAMES J. B. TAYLOR, M.B.

Lightburne House, Ulverston, Dec. 23rd, 1880.

Mr. Myers.—Any registered surgeon would advise on the subject.

RETREATS FOR DIPSOMANIACS.

To the Editor of THE LANCET.

SIR,—Can any of your readers either tell me or put me in the way of learning whether any retreat for dipsomaniacs has been opened anywhere in England under the provision of the recent Habitual Drunkards Act, such that a patient, on previously signing his consent, may be actually compelled to remain for some period?

I do not see any such advertised in the columns of THE LANCET.

I am, Sir, yours truly,

Nottingham, Jan. 4th, 1881. PHILIP J. SMITH.

EXAMINATIONS AT THE ROYAL COLLEGE OF SURGEONS.

THE first examination for the present session in Anatomy and Physiology for the Diploma of Membership of the College was commenced on Monday last, when 146 candidates presented themselves, being six in excess of the corresponding quarter last year. The following were the questions on Anatomy submitted to them, when they were required to answer four, and not more than that number, out of the six questions:—

1. Describe that portion of the innominate bone which lies internal to a line drawn vertically through the centre of the obturator foramen.

2. Describe the palmar fascia. What structures lie superficial to it, and what are exposed upon its removal?

3. Describe the attachments of the quadratus lumborum. Mention the structures with which it is in relation.

4. Describe the course and inosculations of the anastomotica magna arteries in both upper and lower extremities.

5. What are the structures which form the root of the lung? Describe the relative position of these structures to each other, and the anatomical relations of the root of the lung on both sides of the thorax.

6. Enumerate the nerves supplying the skin and muscles of the scalp, and mention the sources from which they are derived.

The following were the questions on Physiology:—

1. In what manner is urine secreted? By what circumstances are its quantity and quality affected in health?

2. Describe the course of the blood in the fœtus. State the changes which the fœtal blood undergoes in the placenta.

3. What is glycogen? Where is it formed in the human body? From what materials is it formed?

4. Describe the structure of the skin and its glands.

5. Describe the structure and extent of the olfactory mucous membrane. Describe the conditions requisite for the sense of smell.

6. How is absorption effected in the small intestine? State what share is respectively taken in the act of absorption by the lymphatics and bloodvessels.

At this meeting the recently elected members of the Board—Messrs. John Langton and Gerald F. Yeo—took part, Mr. Arthur E. Durham presiding.

PARAFFIN JACKETS.

To the Editor of THE LANCET.

SIR,—Your correspondent, "Enquirer," asks for too much if he thinks an apparatus has yet been devised which will effectually draw outwards a collapsed side of the thorax or the curvature of a spine; but, for all that, much may yet be done to prevent the evil from increasing, and to give comfort and support to the patient.

"Enquirer" has tried plaster-of-Paris and the poroplastic material, and condemns both. Let me recommend him to try paraffin wax, which may be obtained at any of Young's depôts, and which, when melted, must be used just in the same way as liquid starch. The bandage, being soaked in the paraffin, should be lightly wound round the patient's body, and will set much more rapidly than starch. It must be slit up with a strong pair of scissors at the back just before it sets, and, if properly smeared with liquid paraffin wax, will form a stiff, elastic, and cleanly mould of the body, which may be removed at pleasure for comfort at night and to allow ablutions in the morning.

I should mention that another garment should be worn next the body (or the skin may be well oiled in case it is not used) in order to prevent the paraffin from adhering, and that no pressure on the ribs can occur if it is properly managed. Indeed, by the use of a pad placed underneath, any part, may be specially relieved, even of its own share of contact with the jacket. Eyelet-holes may be punched in the jacket along the cut margins, and it will then resemble a corset, which can exercise no pressure, whilst it gives universal support.

I am, Sir, your obedient servant,

EDWARD HAUGHTON, M.D.

Spring Grove, Upper Norwood, Dec. 1880.

Query should apply to the registrar of the university.

Indicus and J. S.—Next week.

W. M. D. has forgotten to enclose his card.

FOGS.

To the Editor of THE LANCET.

SIR,—In reference to your article in last week's LANCET on Rain and Fogs, permit me to draw your attention to what many must have experienced, but no doubt overlooked—viz., last summer I was in a fog off Jersey so black that I could not see the man at the wheel, and this in the daytime. Again, on another occasion, in a steamer off Penzance, the captain called us on deck, saying he did not know the moment that we might not have to jump for our lives. When I got on deck I could not see the captain, though I heard his voice, the fog was so black and thick. Certainly this could not be coal smoke or exhalation from London clay.

I am, Sir, yours truly,

Jan. 3rd, 1881. THOS. R. DOWNES.

HIGH-HEELED BOOTS AND SHOES.

To the Editor of THE LANCET.

SIR,—Dr. Pullin deserves the thanks of the public for bringing the above before them, and had he added a few remarks upon another complication in the boots and shoes of the present day, I should have thought it unnecessary to have troubled you. I mean the shortness of the boots and shoes, and also their narrow and pointed toes. Within the last few years, in addition to high heels, we have these abominable narrow toes, which I believe will be the ruin of half the feet of those who are foolish enough to persist in wearing them. By raising the heel two inches from the ground the foot is pushed forward into a short, tight, narrow funnel, and what is the consequence? Corns and bunions in all manner of unusual places, blisters and sores on different parts of the feet, and, worst of all, pressure upon the toenails, and especially those of the great toe, with inflammation and "ingrown toe-nail," with all its accompanying pain and horrors, and sometimes disease of bone.

I daresay almost every general practitioner will agree with me that he has had many more cases of "ingrown toe-nail" since the high-heeled and narrow-toed mania than when people wore sensible boots and shoes.

I remember one lady consulting me, with shame on her part, who had paid a chiropodist quite a little fortune for "medical attendance" on bunions, corns, and ingrown toe-nails. I have no doubt but that chiropodists are very much in request at the present moment, and are doing a good trade at the expense of those (especially ladies) who will have fashionable boots and shoes.

"The voice of the profession," as Dr. Pullin remarks, will, I trust, be raised against the high heels and narrow toes. It is painful to see young ladies striving to walk in these instruments of torture. It is certainly, if they only knew it, far from graceful or elegant. Apologising for troubling you, I am, Sir, your obedient servant,

Leamington, Dec. 1880. FRANCIS WILLIAM SMITH, M.D.

King Blushrose.—Highly objectionable, of course, and altogether unprofessional; but it is impossible to put a stop to this sort of thing, and we do not wish to advertise the "trade" further by noticing it.

One Aggrieved.—Our correspondent is thanked for his communication, but we see no reason to alter the opinion we have expressed.

CORONER'S LAW.

To the Editor of THE LANCET.

SIR,—There are two points connected with the above subject on which I shall be glad to receive information. 1st. Am I bound to make a post-mortem examination whenever ordered by the coroner? 2nd. Am I liable to be summoned and bound in such case to serve as a juror in the coroner's court?

With regard to the first query I can find no authoritative statement. So far as I can make out, under the Medical Witnesses Act I am bound to give my attendance when so required, but am I also bound to make a necropsy, or rather does "attendance" imply doing this? I am not bound to make an analysis of the stomach and its contents, as in view of possible incompetence in that direction. This may be done by an expert. If incompetence is allowed as an excuse in one direction, can it not be pleaded in another? Would not attendance at midwifery constitute incompetence? Surely in the eye of the law every man must be incompetent or unfitted for any kind of work the doing of which will endanger the life of another.

The second question which I put—namely, as to liability of medical men to serve as jurors, arises from the fact that in this neighbourhood several medical gentlemen have been summoned and have attended as jurors. As I always understood that we were exempt for all service of this kind, and as I still so believe, I shall be glad to receive information, lest I should, by acting on this belief, be running into danger.

I remain, Sir, yours, &c.,

Dec. 17th, 1880. W. HENRY KESTEVEN, M.R.C.S.

COMMUNICATIONS, LETTERS, &c., have been received from—Dr. Morgan, Manchester; Mr. T. Robinson, London; Dr. Liveing, London; Dr. Mahomed, London; Mr. T. R. Downds, London; Mr. G. A. Wright, Pendlebury; Mr. Rimmington; Mr. H. J. Forster; Mr. B. F. Giles, Wem; Mr. Baber, Brighton; Mr. Hayman, Stokenchurch; Mr. C. Lucas, London; Mr. Nettleship, London; Dr. Crocker, London; Dr. Maclagan, Hexham; Mr. Thompson, Chelmsford; Dr. Latham, Cambridge; Mr. Armstrong, Newcastle-upon-Tyne; Mr. Walford; Mr. P. S. Smith; Dr. Godson, London; Dr. Kelsey; Dr. Blomfield; Mr. Thomas Smith, London; Dr. Tomkins, Monmall; Dr. Swift, Walker, Hanley; Dr. Skinner, Clevedon; Dr. Charles, Glengariff; Mr. D. H. Stone, London; Miss Jackson; Mr. Cable, Greenwich; Mr. Hemming; Mr. Rutherford; Mr. Sampson Low; Mr. Clouting, Thetford; Mr. Tyson, Folkestone; Mr. Berry, Wigan; Dr. C. Morfit, London; Mr. Mayall, London; Mr. J. K. Barton; Dr. Lloyd, London; Mr. Stride, Brighton; Mr. Smith, Norwich; Mr. Brodie, Kensington Mrs. Andrews; Mr. Tinley; Mr. Rainbow, Coventry; Mrs. Pratt, Liverpool; Dr. Budd, Norwood; Mr. Willey, Birmingham; Dr. Page, Kendal; Mr. Newington; Dr. Eastwood; Dr. M'Intyre, Natal; Mr. Collier, London; Mr. Outram, Glasgow; Dr. Tatham, Salford; Dr. Barnardo; Commander Cheyne; Mr. Robertson, Manchester; Dr. Collum, Surbiton; Dr. Saul, Lancaster; Mr. Hackett, Leeds; Mr. T. Cooke, London; Mr. Reade, London; Dr. A. B. Squire, London; Dr. Mossman, Eastbourne; Mr. Douglas, Workington; Mr. Willett, Great Budworth; Medicus, Canterbury; Medicus, Lutterworth; H. A. S., Hackney; King Blushrose; O. H. F.; W. D. M.; A Provincial House-Surgeon; No code Mails; &c., &c.

LETTERS, *each with enclosure*, are also acknowledged from—Dr. Edger, Whitley; Mr. Darke, London; Mr. Blease, Altrincham; Mr. Smith, Epperstone; Mr. Greatrex, Eccleshall; Mr. Bartlett, Porlock; Mr. Haines; Dr. McGeagh; Mr. Patmore, Woking; Mr. Ensor, Milborne Port; Mr. Fulton, Toronto; Dr. MacGill, Littleborough; Dr. Inglis, Edinburgh; Mr. Procter, Shifnal; Mr. Hordley, Stoke-on-Trent; Mr. Pinder, Bow; Mr. Tredennick, Stretford; Mr. Thomas, London; Messrs. Bowles and Close, London; Mr. Stilliard, Birmingham; Mr. Redwood, Rhymney; Mr. Amsted, Kilburn; Mr. R. O. Jones, Bala; Mr. England, Cork; Messrs. Bennett Brothers, Salisbury; Dr. Stewart, Leven; Mrs. Carty; Mr. Shore, London; Mr. Peare, Dublin; Dr. Martin, Wakkers Troom, Transvaal; Mr. White, Harrington; Mr. Young, Bridgwater; Mr. Paige, Whitley; Mr. W. H. White, London; Mr. Brown, Canterbury; Mr. Heywood, Haydock; Mr. Pratt, Eversleigh; Mr. Clarke, Cape of Good Hope; Mr. Milner, London; Mr. Abbott, Sheffield; Mr. Broster, Clapham; Dr. Graice, Blackburn; Dr. M'Calman; Mr. Willey, Birmingham; Dr. Sutherland, Castle Town; Dr. Reid, Harris; Mr. Caldwell, Shotts; Messrs. Keith and Co., Edinburgh; Dr. Woodward, Puckeridge; Mr. Hardman, Blackpool; Mr. Farrow, Ingham; Dr. Pieterson, Wynburg, South Africa; Mr. Baxton, Hammersmith; Dr. Cowan, Napanee, Canada; M.R.C.S.; W., Liverpool; Surgeon, Monaghan; T. H. J. C., Great Ilford; G. A. N., Cannock; Enchondroma; M.D., York; W. N., Badleigh, Salterton; P. S., Southport; D. W.; Alpha; J. R. P., Leicester; S., Dudley; Medicus, M.D.; Alpha, Worcester; Tutor, Bristol; D., Hereford; A. B., Kensington; D. M. E., London; Medicus, Swansea; G. W. L., Shelbourne; Beta, Clay-cross; A. B. C., London; Medicus, Workington; W. W. F., Portpatrick; Medicus, London; X., London; Medicus, Swindon; Medicus, Leicester; A. H. E.; Nucleus; Alpha, Bedford; I. S. D., London; R. B. T.; Practice; H. A. S., Reigate; O. H. S.; Sigma, Oxton; Coachman, Uxbridge; Tibia, Chestham; J. J. W., Strood; P. S., Southport.

Doncaster Chronicle, The American, West Kent Courier, Medical Temperance Journal, Journal of Applied Science, Homœopathic World, Eastern Morning News, The Statesman, Charity Record, Chicago Medical Review, &c., have been received.

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Books and Publications	£0	5	0
Official and General Announcements	0	5	0
Trade and Miscellaneous Advertisements	0	4	6
(Seven lines, each averaging ten words, or seventy words in all).			
Every additional Line	0	0	6
Front Page per Line	0	1	0
Quarter Page	1	10	0
Half a Page	2	15	0
An entire Page	5	5	0

The above Scale of Charges is arranged upon the basis of the classification adopted in the Index.

NOTICE.—Advertisers are requested to observe that it is contrary to the Postal Regulations to receive at Post-offices letters addressed to initials only.

An original and novel feature of "THE LANCET General Advertiser" is a special Index to Advertisements (on page 8), which not only affords a ready means of finding any notice, but is in itself an *additional* advertisement.

Advertisements (to ensure insertion the same week) should be delivered at the Office not later than Wednesday, accompanied by a remittance.

Answers are now received at this Office, by special arrangement, to Advertisements appearing in THE LANCET.

Terms for Serial Insertions may be obtained of the Publisher, to whom all letters relating to Advertisements or Subscriptions should be addressed

Advertisements are now received at all Messrs. W. H. Smith and Sons' Railway Bookstalls throughout the United Kingdom.

The postal arrangements relating to the distribution of THE LANCET will be considered from time to time in the interests of subscribers.

Tables of Contents, with the Index of Advertisements, for each Number can be had on application to the Publisher.

Agent for the Advertising Department in France—J. ASTIER, 67, Rue Caumartin, Paris.

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